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January 8, 2016

Approved By
European Department

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TAX REFORM IN THE NETHERLANDS: MOVING CLOSER TO BEST PRACTICES[1]

The government has recently floated ideas for a broad tax reform, including measures to decrease the labor tax wedge, eliminate VAT distortions, as well as measures that increase labor force participation and delegate more taxing powers to regional governments. Following intense debates, a more modest income tax cut package of €5 billion has been agreed upon for 2016.

This paper aims to contribute to the discussion by sketching ways in which the taxation equity-efficiency frontier could be shifted outwards in the Netherlands. In a nutshell we argue that significant efficiency gains could be achieved by shifting the tax burden away from labor, and towards consumption and capital—especially housing.

In our view, considerable thought should be given to reforming capital income taxation, which is fragmented, inefficient and has many regressive features. We also highlight the detrimental impact of the tax-benefit system on labor supply—in particular by mothers—and the insufficient and distortionary use of VAT as a revenue-collection mechanism. Finally, the Dutch tax system favors debt over equity financing. The distortion is particularly large in the housing sector where debt building is generously subsidized leading to over-leveraged household balance-sheets. But similar debt-bias is also present in the corporate sector.

Future tax reforms should explore ways to relieve the burden on labor by diversifying the sources of tax revenues. Measures that expand the tax base and increase burden-sharing across tax instruments, that tackle the debt bias in corporate and household financing, that eliminate VAT distortions and increase labor force participation must be encouraged.

This note reviews the main features of the Dutch tax system and sketches the contours of a hypothetical tax reform. While voluntarily high-level, the discussion aims to contribute to the ongoing debate by highlighting the most important gaps with established best practices.

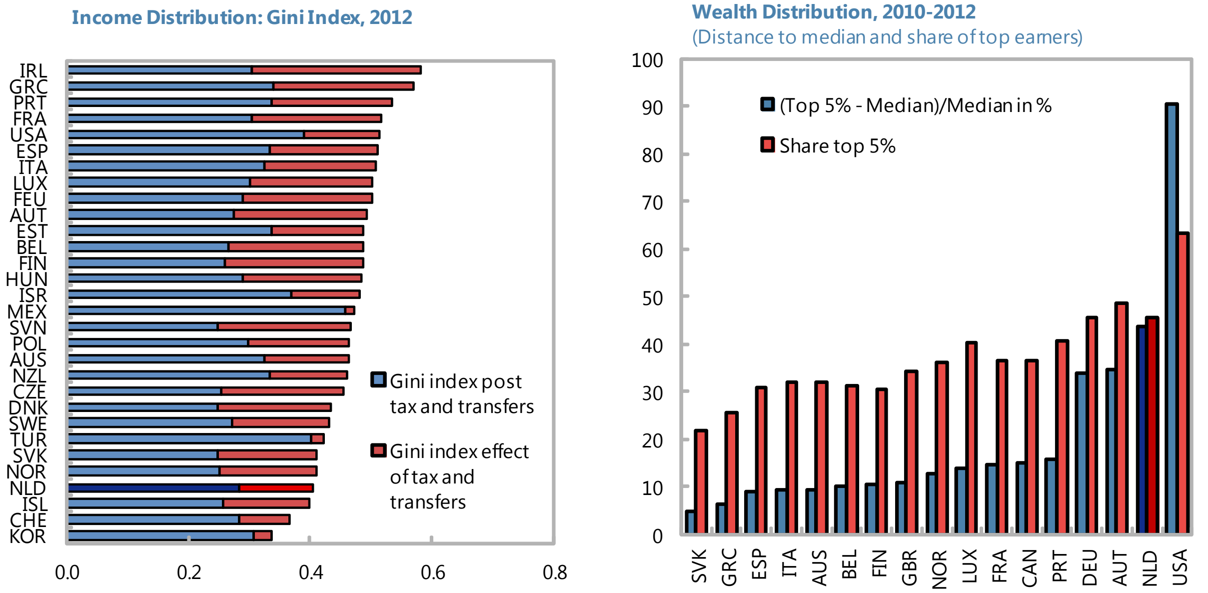
A. Introduction and Stylized Facts

1. **In the Netherlands, a very uniform distribution of income contrasts with a rather skewed wealth distribution (ex-pension entitlements).** The Dutch economy is hardly distinguishable from other advanced open economies when measured against the usual yardsticks of income per capita, potential growth and inflation. But the combination of very uniform income distribution and very skewed wealth distribution sets it apart. Although typical measures of wealth do not take into account pension-related savings—the most important store of wealth in the Netherlands—this still comes as a surprise given the country's revealed social preference for equity, and suggests scope to transfer some of the tax burden from labor to capital.

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[1] Prepared by Jean-Marc Natal (EUR). This paper greatly benefitted from helpful comments by Ruud de Mooij and Arjan Lejour and discussions with Bas Jacobs.

Figure 1. The Netherlands: Income and Wealth Distribution

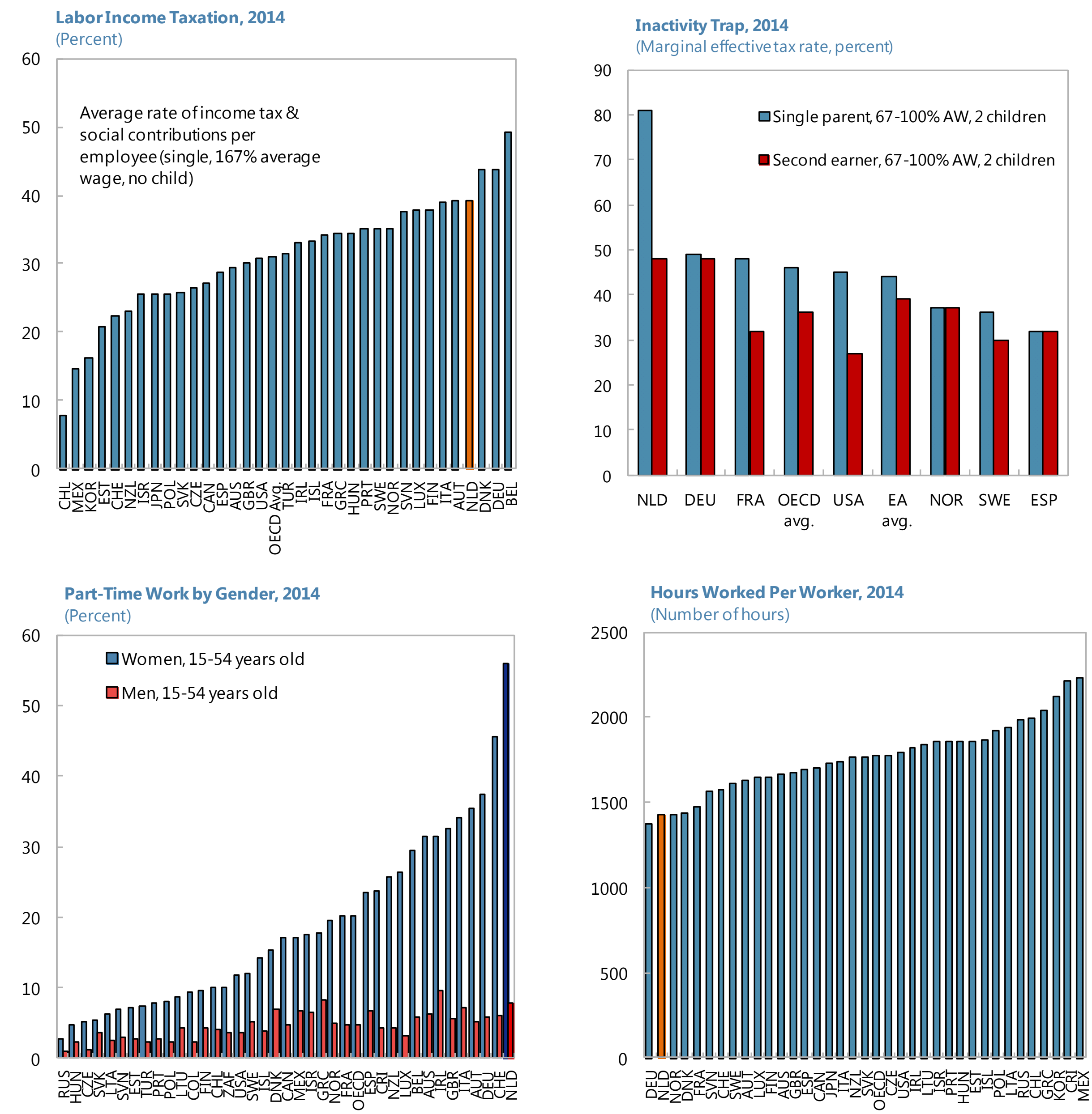


Source: OECD.

2. **Labor income taxation is doing the heavy lifting in terms of revenue collection and income redistribution.** The comparatively elevated (with respect to European counterparts) labor taxation in the Netherlands features a very progressive labor tax scale and dissuasive marginal tax-and-benefit schemes for low income workers—in particular mothers. At the same time, capital income taxation is one of the lightest in the European union, and indirect taxation—a potentially efficient revenue collection instrument—does not carry its share of the load (see Table 1). By discouraging labor supply, the current tax system shrinks the tax base and overloads taxpayers.[2]

[2] Approximate back-of-the-envelope calculations suggest that taxing pensions as ordinary savings under Box 3 (€14 billion; 1.2 percent wealth tax on about €1.2 trillion pension wealth), removing the tax subsidy on owner-occupied housing (about €6 billion in lost fiscal revenues due to the combination of low imputed return on housing and high deductibility of mortgage interests, see paragraph 11), and unifying VAT at the standard rate (€8 billion) would increase (ex-ante) revenues by roughly 4 percent of GDP.

Figure 2. The Netherlands: Labor Income Tax Burden



Source: OECD.

B. Improving the Design of Capital Income Taxation

3. **A voluminous theoretical research on optimal taxation has reached rather straightforward conclusions** (Mirrlees review, 2011, De Mooij, 2007, Jacobs, 2013). A good tax system should be simple, transparent, efficient, and should not introduce arbitrary differentiations across commodities, taxpayers, or forms of economic activity. In achieving a given level of income redistribution (a social choice) the tax system should aim to minimize the distortions on individual consumption and production choices; it should trade a larger tax base for a lower tax rate. The

principles are clear, but the implementation often raises a whole set of issues—which are particularly acute when it comes to taxing capital income.

4. **An unequivocal theoretical recommendation on the appropriate fiscal treatment of capital income is still lacking**. One school of thought argues that capital income is part of a comprehensive income, and should be taxed in the same way as labor income according to the ability-to-pay principle. The major problem with this approach is that taxing savings—especially at a progressive rate—increases the price of future consumption and discourages investment; an important violation of the principle of neutrality of taxation. The distortion is even larger when the tax is levied at the source (corporate tax) as corporate capital is more internationally mobile than personal capital (Sørensen, 2007). This has led to the seemingly logical and opposite conclusion that returns to capital should not be taxed at all. At least normal[3] returns should be exempted, suggesting that the optimal taxation design is an expenditure tax that implicitly exempts normal returns to capital but taxes excess returns (Mirrlees, 1971, Atkinson and Stiglitz, 1976, Mirrlees review, 2011). While a priori attractive on efficiency grounds, this policy prescription poses practical (political) challenges along the equity dimension—even if redistribution can theoretically be addressed via labor income taxation. Moreover, exempting capital income shrinks the tax base and for given revenue needs may place an excessive—and potentially inefficient—burden on other forms of taxation.

5. **A pragmatic solution to the ongoing theoretical debate: the DIT.** The so-called Dual Income Tax system (DIT) put in place by several Nordic countries since the end of the nineties (i.e., Finland, Norway, Sweden) can be seen as a compromise between the *comprehensive income* and the *expenditure tax* outlined above. In its purest form, the DIT combines a low, unique and flat tax rate on all capital incomes[4], with a higher and progressive tax rate on labor income—for revenue and distributional purposes (Sørensen, 2007, 2010 and Jacobs, 2013). A unique, flat and low tax rate on capital income i) avoids the undesirable progressivity of the taxation of real returns due to the inflation premium, ii) aligns the marginal personal income tax on capital with the corporate income tax, eliminating the scope for tax arbitrage activities and allocational distortions, iii) minimizes the risk of capital flight while broadening the tax base and iv) simplifies tax administration as it allows the tax on interest and dividends to be collected as a withholding tax.[5]

6. **The Achilles heel of the DIT system is that it provides new tax-arbitrage opportunities.** Under a pure DIT system, there is strong incentives for some individuals—mainly self-employed and small business owners—to re-label high-taxed labor income activities as low-taxed capital income. One practical solution to this tax-arbitrage issue—pioneered by Norway in 2006—is to levy an additional personal shareholder tax for all capital incomes (both dividends and capital gains) that

[3] A rate of return that compensates investors for time preference and expected inflation.

[4] The DIT usually includes a mechanism to avoid the double-taxation of equity.

[5] Note that in practice international treaties signed by Nordic countries forbid levying withholding taxes on interest and dividends paid out to non-residents.

exceed the normal return to capital (already taxed under the low and flat corporate income tax, CIT). The personal shareholder tax rate is chosen such that the combined tax burden on capital income is close to the highest bracket of labor income tax,[6] thereby eliminating the incentive for income shifting (Sørensen, 2010).[7] An alternative approach consist in maintaining the pure DIT system (with a low and flat tax rate on all capital incomes), but to explore allocation rules that effectively split income revenues along the labor and capital lines—thereby avoiding income shifting practices. However, the Norwegian experience suggests that splitting rules are prone to be circumvented and difficult to enforce.

7. **The Dutch capital income taxation system is still some distance away from best practices.** The Netherlands introduced a new regime for capital income taxation as part of a complete tax reform in January 2001. The most significant changes with respect to the old system was i) the introduction of the box scheme for sorting out different sources of personal incomes for taxation purposes, and ii) the introduction of the 'presumptive' tax on personal capital income in Box 3, which taxes capital income at 30 percent 'ex-ante' on an imputed rate of return on assets of 4 percent; the presumptive capital income tax is therefore equivalent to a 1.2 percent wealth tax.

8. **Widely different regimes for different types of capital cohabitate, which creates important distortions.** While the new system greatly reduced the tax collection administrative burden, it also introduced a whole range of new issues. First, the Dutch tax system—unlike the DIT system—violates the neutrality principle, potentially introducing large distortions in savings and investment choices. Some capital incomes are taxed at a progressive rate in Box 1, like e.g., the return on equity invested in proprietorship, or the imputed rent on owner occupied houses net of mortgage payment deductions. Others are taxed at proportional rates in Box 2, like e.g., the return on equity invested in closely-held corporations. And the rest is taxed in a regressive fashion[8] in Box 3, like e.g., the presumptive return on the value of bank deposits, stocks, bonds and real estate. There is also double-taxation of the returns on corporate equity, which contrasts with the taxation of returns on savings held in pension funds, which are subsidized through the deductibility of pension contributions in Box 1. Second, by imposing an 'ex ante' taxation of presumptive returns in Box 3,

[6] Because it increases the effective tax rate on capital income, this solution seems to defeat one of the stated objectives of the DIT which is to avoid damaging capital flight (see point iii above). However, the relevant tax margin for investment purposes is the CIT. International capital mobility implies that a higher tax on personal capital income will essentially result in lower domestic savings and current account balances, but should not tremendously affect investment if the CIT remains low and constant (Sørensen, 2007).

[7] Note, however, that this solution also introduces a close correspondence between the level of capital and labor income taxes which can be seen as a constraint by the tax authorities.

[8] The effective tax rate on a deposit account with 2 percent return is 60 percent, while the effective tax rate on an equity portfolio with 8 percent return is 15 percent. As equity and other high yielding assets, including real estate, are typically held by wealthier individuals, the presumptive taxation system is regressive. A new law on capital income taxation scheduled for 2017 attempts to mitigate the regressive aspect of the current arrangement by setting the presumptive return as a function of total wealth, divided into three brackets (W<€100,000; €100,000<W<1,000,000; W>1,000,000). While an improvement with respect of the current arrangement, the new system still falls short of taxing realized capital returns.

the Dutch capital income taxation system encourages excessive leverage and risk taking, favors portfolio investment and forgoes the beneficial countercyclical properties of taxing realized returns (dividend and capital gains). Third, the Dutch tax system severely distorts business incentives towards debt financing and away from equity. This is in particular the case for small businesses and self-employed whose income after—interest-payment-deduction is taxed under Box 1 at a progressive rate, and for owner-occupied housing whose (artificially low) imputed rental income is taxed net of mortgage interest payments.

9. **The Netherlands subsidize pensions saving through a favorable taxation regime.** In the Netherlands, like in many other countries, the accrual of pension wealth—in contrast to other forms of capital—is not subject to capital income taxation, in violation of the principle of neutrality in taxation that suggests that pension funds should be taxed like other forms of savings. Pension savings are also subsidized through the tax treatment of contributions and retirement benefits. Contributions are deducted from taxable labor income and are taxed at a later stage—but at a lower rate—when pension benefits are disbursed. As high-income earners are able to contribute (and deduct) relatively more to pension plans (including 2nd and 3rd pillar) than low-income earners, pension savings are not only subsidized but the scheme has regressive features. The regressive aspect of the system is made worse by the progressivity of labor income taxation as higher income earners are able to deduct at a comparatievely higher rate. To avoid regressive taxation, the tax rate on retirement income should correspond to the one at which the deductions were made on average. Merely capping the tax deductible contributions[9] is a very crude way to mitigate the regressive nature of the pension tax scheme, as it introduces additional distortions and arbitrary redistribution. Because pension savings are largely mandatory, decreasing the pension subsidy would not deter savings but boost tax revenues that could be used to further trim the labor tax wedge. The budgetary impact of taxing pension savings as other capital in Box 3 could be considerable as total pension fund assets exceed €1.2 trillion in the Netherlands.[10]

[9] The tax base for pension deductions is capped at €100,000 in the Netherlands.

[10] A simple back of the envelope calculation would suggest €14 billion (€1,200 x 1.2 percent) to which we could add the current lost revenues from taxing retirement benefits at a reduced rate.

Box 1. Personal Income Taxation in the Netherlands

On January 1, 2001, the tax authorities of the Netherlands introduced the new Income Tax Act 2001 (Wet Inkomstenbelasting, 2001) whose main element was a reform of the tax treatment of income from savings and investment at the personal level. The new income tax system groups different types of incomes into separate 'boxes' with different tax rates. The table below[1] summarizes the system's main features.

Box	Types of income (a)	Tax rates (2015)
BOX 1 (b)	**Tax on income from work and home ownership** ▪ Labor income (c) ▪ Return on capital of proprietor ▪ Interest, rental income and capital gains on assets put at the disposal of closely held companies by controlling shareholders ▪ Net (of mortgage interests) imputed rental value of owner-occupied housing (d) ▪ Pensions (e)	€0–19,822**: 8.35%** (g) €19,823–33,589**: 38.5%** (h) €33,590–57,585**: 42%** €57,585–: **52%**
BOX 2	**Tax on substantial interest** ▪ Distributed profit (dividends) and realized capital gains on shares that belong to a dominant shareholder of a closely held corporation (f)	**25%**
BOX 3	**Tax on savings and investments** ▪ Personal wealth: 4 percent presumptive return on the value of shares, savings deposits, bonds, immovable property and (not tax-exempt) capital insurances	**30%**

a. Corporate profit (net of interest income) is taxed at 25 percent (20 percent for profits up to €); capital income realized through pension savings is not taxed.

b. General tax credit, income related tax credit, children related tax credit and other deductions apply

c. Includes wages, salary of proprietors, presumptive wage income of the director-dominant shareholder (at least 5 percent of shares) of a closely-held corporation, social security benefits.

d. Paid interest is tax-deductable at the marginal tax rate in Box 1. Starting in 2014, the applicable marginal tax rate is decreased by 0.5 pp per year, from 52 percent to 38 percent. An owner-occupied house is considered a consumption good under the Dutch tax system, and thus exempt from capital taxation. An imputed rental income (eigen-woningforfait) is (which amounted to 0.7 percent of the value of the house in 2014) is added to households' taxable income.

e. Pensions savings are deductable from taxable income in Box 1, pension benefits are taxed under Box 1at retirement.

f. A controlling shareholder holds, either alone or together with his/her partner, at least 5 percent of the shares of a (closely held) corporation.

g. 36.5percent, including social security contributions.

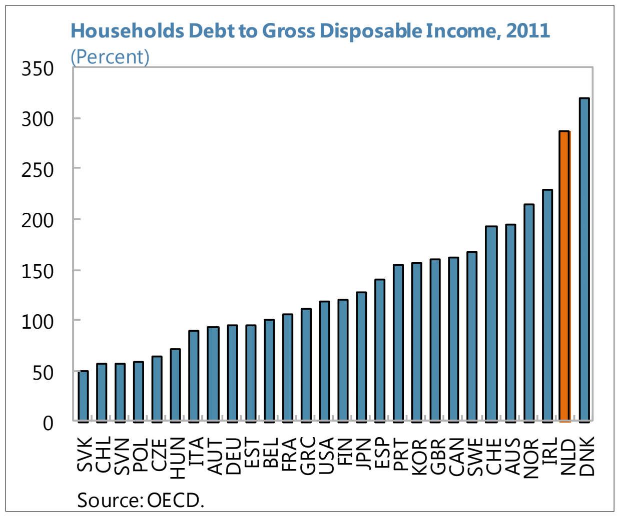
h. 42 percent, including social security contributions.

[1/.] Based on Cnossen and Bovenberg (2001) and the Dutch Ministry of Finance.

C. Correcting for the Debt Bias

10. **The favorable tax treatment of debt over equity—at both the personal and corporate levels—introduces large distortions.** Besides creating significant inequities, complexities and economic distortions, high levels of debt to equity present important risks for financial stability and fiscal sustainability (De Mooij, 2012). Basically, two different options are available to mitigate the problem: either eliminating the tax deductibility of interests or introducing a similar deduction for equity. Under the Comprehensive Business Income Tax[11] (CBIT) corporate income is taxed before interest. Treating debt and equity financing in a symmetric way also eliminates the need for capital income taxation at the personal level which solves the traditional problem of the double taxation of equity.[12] However, because of fears that investment could be affected in the transition towards a system that implies a higher taxation of corporate profits[13], international attention has moved towards the alternative—the so-called Allowance for Corporate Equity (ACE).[14] The ACE allows firms to deduct an imputed normal return on equity from the CIT as they do with interest on debt.[15] The main practical problem with the ACE is that the loss in fiscal revenues has to be compensated with other—possibly distortionary—taxes or by higher statutory tax rates, which may trigger international tax arbitrage behaviors by the most profitable firms. This caveat can be mitigated by introducing the ACE in an incremental way.

11. **In the Netherlands, the debt bias is particularly large in the subsidized housing sector**, where taxable imputed returns on property are set at an artificially low level while mortgage interests are deductible—at progressive rates—from personal income under Box 1. This is an important distortion as large amounts of savings are detracted from potentially productive investments to further inflate house prices. The subsidy is so large that



[11] Proposed by the U.S. Treasury in 1992.

[12] Note that introducing a withholding tax on interest in a DIT system is equivalent to the CBIT. CIT = tau*(R–dK–iB) + tau*(iB) = tau*(R–dK), for (R) the net cash flow post labor costs, (d) the depreciation rate, (K) the firm's capital stock and (iB) the interest paid on net debt.

[13] A priori, the CBIT increases CIT and decreases PIT, while ACE does the opposite. As business capital is more internationally mobile than personal capital, the general preference for ACE is easily understandable. However, one could argue that enlarging the tax base would permit lower tax rates so that the net effect of the CBIT on CIT may not be positive after all. At the end of the day, it all boils down to how other taxes are adjusted and able to pick up the slack when either CBIT or ACE is introduced.

[14] First proposed by the Capital taxes group of the Institute for fiscal studies in 1991.

[15] The ACE also provides a natural hedge against the investment distortion caused by deviations between true economic depreciation and depreciation for tax purposes; if firms write down their assets at an accelerated pace, the current tax saving will be eventually offset by a fall in future rate of return allowances.

the overall revenue from capital income taxation at the personal level is negative (see Table 1). Clearly, a more balanced tax treatment of housing-related debt would free up a lot of fiscal resources that could be used to decrease distortionary taxes on labor or other capital income. As residential capital is a very inelastic factor, a housing tax would be efficient.

12. **Some measures have already been taken to reduce mortgage deductibility over time. But more should be done to reduce the debt bias in the housing sector.** A higher equity share in housing should help prevent boom-bust cycles with important benefits in terms of financial stability and fiscal sustainability. And there are many ways to achieve this result. The principal of neutrality in taxation suggests that owner-occupied housing should be taxed as capital income, not as personal income—which could be easily accommodated under the current system by shifting home-owner property investment from Box 1 to Box 3. Such a move would eliminate the exorbitant subsisdy attached to owner-occupied housing. Preferably, under a new capital income taxation system (as delineated in precedent paragraphs), imputed rental costs would include a risk premium on top of the benchmark risk free rate, and could take into account depreciation costs (Jacobs et al., 2007). Consistent with a CBIT-like system, mortgage deductibility could be phased out faster than under current agreements. In case of a sharp house price drop, the (large) fiscal revenue windfall from removing the home-owner subsidy could be partially used to help the most vulnerable (under-water) home owners increase home equity. In the long run, a form of housing equity allowance—calibrated in a similar fashion as the ACE for corporates—could be introduced to match the remaining deductions from interests on mortgage, if any.

D. Trimming the Labor Tax Wedge Further

13. **The recently announced €5 billion tax cut package is a step in the right direction, as the measures strengthen work incentives with a focus on low incomes and 2nd earners.[16]** Future measures should continue to be focused on low-income and mothers (both singles and in couple), which are the groups with the largest labor supply elasticity—along the extensive margin—and the highest 'participation' tax. (See Figure 2).[17]Targeted measures that stimulate work incentives,

[16] The measures are expected to create about 35,000 new jobs, in particular among dual earners households with small children. The €5 billion tax cut package announced on September 15 will be allocated as follows:

- i) Rise in the personal income tax threshold of the fourth tax bracket (highest earners), from the current €57,585 to €65,000, for which the tax rate will remain at 52 percent (about €1 billion);
- ii) Reduction in the total personal income tax rate in the second and third bracket between €19,923 and €66,421 per year (about €2.5 billion);
- iii) Increase in earned income tax credit and childcare subsidies for second earners (about €500 million) and corporate tax incentives for hiring of low-paid workers (about €500 million);
- iv) Increase in personal tax-free allowance for incomes up to €50,000 per year, alongside a reduction in the number of general tax exemptions (about €500 million).

[17] The participation tax is defined as the sum of increased taxes and lost benefits when labor income is increased by a given amount.

like e.g., in-work tax credit to low income workers, income dependent tax credit for second earners or for single parents, or income-dependent child benefit, should be favored. Combining in work tax-credit for low income earners with lower across-the-board benefits would exert the largest 'bang for the buck' in terms of labor supply as income and substitution effects work in the same direction. However, the impact on income distribution would also be the largest (De Boer et al., 2014). There might also be some scope for a slight reduction in the marginal tax rate on high-earners (above €57,585 per year). Recent simulations (Jacobs, 2013) show that the marginal tax rate on high-earners is set slightly above the revenue-maximizing level. Lower marginal tax rates on high-earners might also disincentivize large investment in tax deductible mortgages which in the past led to sharp increase in households' debt and associated financial fragility.

E. Indirect Taxation: Unifying VAT Rates

14. **Economic theory unambiguously suggests that VAT rates should be unified across different goods and services.** A unique VAT rate ensures that production and consumption choices remain undistorted (neutrality)—with signficant welfare gains (Bettendorf and Cnossen, 2014)—it eliminates costly tax evasion behaviors and simplifies administrative processes. This consensus stands in stark contrast with the dominant practice. In spite of a voluminous theoretical research that shows that redistribution is more efficiently done via labor income tax, VAT rates are often used for redistribution purposes, with necessities taxed at a reduced rate.

15. **Unifying VAT rates in the Netherlands would provide sizeable additional tax revenues that could be used to further reduce more distorting labor income tax.** The scope for shifting revenue collection from the highly distorting labor income tax to the more neutral VAT is particularly large in the Netherlands where the burden of indirect taxation is among the lightest in Europe (Table 1). Simple calculations (Table 2) show that the (ex-ante)[18] impact of standardizing VAT rates would amount to €8 billion (if only reduced rate items were adjusted).[19] Alternatively, extending the tax base to reduced rate items would allow a decline in the standard rate to 12.3 percent—to the extent that the additional revenue is not used to reduce labor taxes.

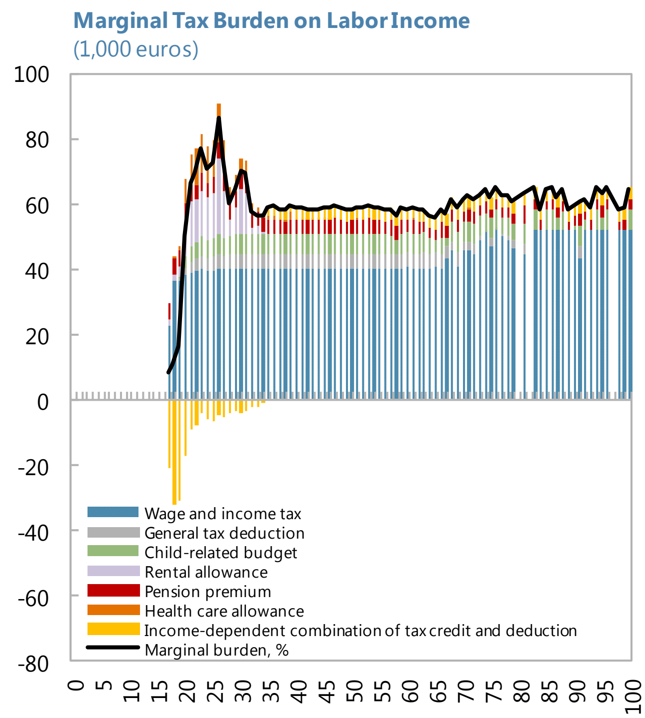
16. **The usual redistribution argument for maintaining differentiated tax rates does not hold in the Netherlands.** Bettendorf and Cnossen (2014) show that i) the share of household budget spent on reduced rates items does not differ much across income groups and ii) the VAT burden does not vary much in proportion of income/expenditures. Wealthier households benefit as much as poorer households from the reduced VAT rates: they just consume more of the exempted goods and services, in line with their relatively higher disposable income.

[18] Of course these calculations tend to oversimplify as they assume constant behaviors throughout. A more interesting exercise would look at the growth and unemployment effects of a budget neutral increase in VAT.

[19] If the unique VAT rate was extended to all currently exempted goods and services, the tax revenues would amount to a maximum of €33 billion or 70 percent of total personal income revenues ex-social contributions. Note that this would have to be compatible with the EC directive which legislates what services are to be exempted and therefore set a higher bound.

F. Streamlining the Tax-Benefit System

17. **The tax-benefit system has become excessively complex and requires stronger screening and monitoring capacity at the Tax and Custom Administration (TCA).** The multiplication of taxes and allowances has put the TCA under considerable strain (Algemene Rekenkamer, 2015). This is in particular the case for the regime of allowances, as the TCA is in charge of eligibility assessment and enforcement. A large investment in specialized staff and technology will be necessary to track and organize a tremendous volume of information and avoid abuses and fraud that could eventually lead Dutch tax payers to lose confidence in the tax system. Steps in the right direction have been taken and a pluri-annual IT development plan agreed upon.



Source: CPB.

18. **The limits and potential costs of the current system of allowances can be epitomized by the generous tax exonerations for self-employed.** Initially seen as a way to increase the flexibility of the labor market, the self-employed allowance scheme may have introduced a very large distortion in the labor market with important long to medium-term costs. First, as mentioned above, it is very difficult for the TCA to assess the many features (i.e., allowance for R&D activities, for investment, for hours worked by partners in the family business, deductions for assets depreciation) that give rise to tax allowances and deductions under the self-employed program. As the number of self-employed swells, this situation runs the risk of transforming the self-employed status into a tax avoidance scheme. Second, and even more importantly, the potential long-term costs of the tax-preferred status for self-employed may not be negligible. By favoring self-employed, the current tax system may be creating small business traps (3/4 of self-employed are active in a one person company) with important negative consequences for productivity growth (inefficient labor organization, lack of training on-the-job and actual investment in R&D). Self-employed also typically drop off the usual social security and pension plans, which may pose important risks for individual coverage and the long-term financial stability of these institutions.[20]

[20] For a more extensive discussion of the status of self-employed in the Netherlands, please refer to the special issues paper, "Dual Labor Market in the Netherlands—Environment and Policy Implications" by Michelle Hassine.

G. Decentralizing Taxing Powers

19. **There is ample scope for decentralizing taxing powers in the Netherlands.** In 2014, only 10 percent of regional-government revenues were financed by local taxes—a particularly low number in international comparison. By transferring tax raising powers to local authorities, the government could foster greater fiscal commitment and better scrutiny. This would also increase incentives for local governments to spend revenue efficiently. Local recurrent property taxes on owner-occupied houses could be the ideal vehicle to enhance taxing powers at the regional level, while at the same time trimming housing subsidies.

H. Conclusions

20. **The tax system in the Netherlands is one of the most equitable in the OECD. But there is ample scope for improvement along the efficiency dimension.** First, capital income taxation is fragmented, regressive, distorts allocation towards excessive investment in housing and favors debt finance over equity—at both corporate and personal levels. A more homogeneous capital income tax system along the lines of the Nordic dual income tax (DIT) system would go a long way in correcting the largest distortions. Second, a more symmetric tax treatment of debt and equity would contribute to dampen the amplitude and reduce the frequency of boom-bust cycles, thereby improving financial stability and fiscal sustainability. Introducing an ACE and/or backtracking on the favourable treatment of debt—in particular in the housing sector—should be high on the agenda. Finally, increasing both VAT and capital income tax revenues would help alleviate the burden on labor income taxation and increase labor force participation (hours worked).

Table 1. Structure of Taxation in the Netherlands, European Comparison*

(Percent of GDP)

	2007	2008	2009	2010	2011	2012	2012	
A. Structure of revenues							Ranking	Bil. Euros
Indirect taxes	13	12.7	12.2	12.5	12	11.9	22	71.1
VAT	7.5	7.3	7	7.3	6.9	7	24	41.7
Excise duties	2.4	2.4	2.3	2.3	2.2	2.2	26	13
Other taxes on products (incl. import duties)	2	2	1.8	1.8	1.6	1.5	8	8.9
Other taxes on production	1	1.1	1.2	1.2	1.2	1.2	14	7.5
Direct taxes	12.2	12	12.1	12.2	11.7	11.2	13	67
Personal income	7.4	7.2	8.6	8.5	8.1	7.7	13	45.9
Corporate income	3.5	3.4	2.1	2.3	2.2	2.1	20	12.7
Other	1.3	1.3	1.4	1.4	1.4	1.4	6	8.3
Social contributions	13.5	14.5	13.8	14.2	14.8	16	2	95.8
Employers	4.5	4.8	4.9	5	5.1	5.4	19	32.6
Employees	6.1	6.6	5.9	6	6.4	7	2	41.7
Self- and non-employed	2.9	3.1	3	3.1	3.3	3.6	1	21.4
Total	38.7	39.2	38.2	38.9	38.6	39	11	233.8
B. Structure by economic function								
Consumption	11.6	11.4	11.1	11.4	11.1	11	20	66.1
Labour	19.8	20.7	21.1	21.4	21.7	22.4	8	134.5
Capital	7.3	7.1	5.9	6.1	5.8	5.6	19	33.3
Capital and business income	4.7	4.6	3.5	3.7	3.5	3.4	20	20.3
Income of corporations	3.5	3.4	2.1	2.3	2.2	2.1	20	12.7
Income of households	-0.9	-1	-0.9	-0.9	-1	-1	28	-6.2
Income of self-employed	2.1	2.2	2.2	2.3	2.3	2.3	7	13.8
Stocks of capital wealth	2.6	2.5	2.4	2.4	2.2	2.2	12	12.9

Source: Eurostat, Taxation Trends in the European Union, 2014

*/ The ranking reflects relative levels of revenue-to-GDP ratios for each revenue source among the EU-28, with rank 1 being the highest ratio.

Table 2. Composition of VAT Revenues, 2010

	Bil. Euros	Percent
Potential revenue = Standard rate (19%) × Total final consumption	74.7	100.0
Policy gap = (Standard rate-effective rate) x reduced/exempt base	-33	-44.2
Exemptions	-19.6	-26.2
Out-of-scope governments	-5.3	-7.1
Reduced rate	-8.1	-10.9
Revenue with full compliance	41.6	55.7
Compliance gap	-1.5	-0.2
C-efficiency	**40.1**	**53.6**
Memo items:	Bil. Euros	VAT Rate, Percent
Final consumption	393.2	
Equivalent standardizing reduced rates (Uniform VAT rate, in %)	48.2	12.3

Source: Bettendorf and Cnossen (2014), IMF staff calculations

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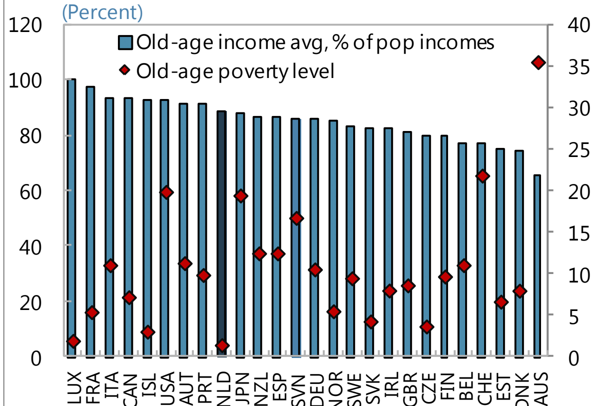
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REFORMING OCCUPATIONAL PENSION SCHEMES IN THE NETHERLANDS[1]

A. Introduction

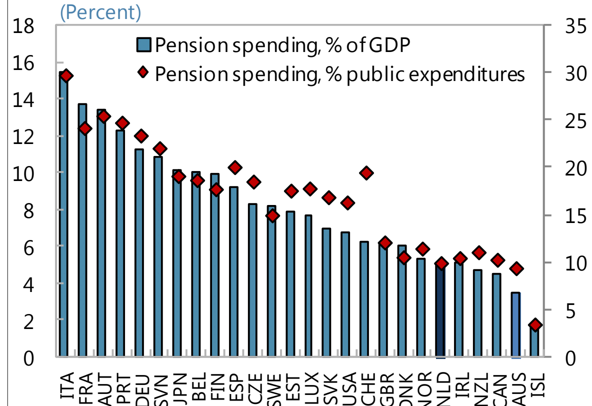
1. **The Dutch pension system has served its beneficiaries well, achieving extended coverage at reasonably low cost to the government.** The combination of a flat-rate 'first pillar' pay-as-you-go public scheme and pre-funded, earnings-related pension funds has resulted in virtually eliminating old-age poverty while ensuring generous replacement rates. The basic old-age pension from the public scheme (AOW) is available to anyone who has reached pension age. Benefits are accrued at 2 percent per year spent in the country, providing for a full pension representing 70 percent of the minimum wage for a single person, 50 percent for each member of couples—resulting in a replacement rate of roughly 30 percent of the average wage. Most of the retirement income comes from 'second pillar' occupational pension plans, funded by tax-deductible employee and employer contributions of about 18 percent of earnings, and which typically guarantee the replacement about 60 percent of the average wage.

Old Age Income and Poverty, 2008
(Percent)



Source: OECD.

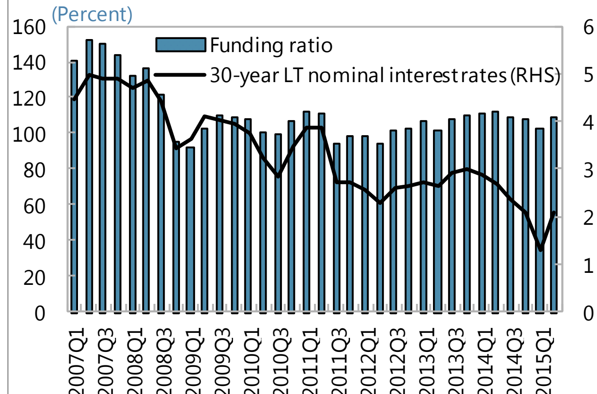
Public Expenditures on Pension, 2009
(Percent)



Source: OECD.

2. **While the fiscal sustainability of the 'first pillar' has improved, the 'second pillar' pension funds have come under strain during the financial crisis.** In the face of a rapidly ageing population, the fiscal sustainability of the public scheme has been recently strengthened by a stepwise increase of the retirement age to 67 years by 2021, to be adjusted to life expectancy

The Netherlands: Pension Fund Funding Developments
(Percent)



Source: DNB.

[1] Prepared by Marc Gerard (EUR).

thereafter. Meanwhile however, the solvency of most 'second pillar' pension funds has been undercut by the financial crisis. Funding ratios have deteriorated under the joint effects of an initial drop in investment returns and a protracted increase in accrued liabilities triggered by very low discount rates—prompting some funds to levy catch-up contributions or reduce benefit indexation in a pro-cyclical way. These financial difficulties have added to a number of structural shortcomings of the funds, notably a high degree of complexity likely to affect cost efficiency, limited flexibility in the face of changing labor market needs, and opaque redistribution channels, notably from younger to older generations.

3. **This paper aims to provide a contribution to the ongoing national debate on possible reform options of the 'second pillar' pension plans.** The financial difficulties encountered by the pension funds have prompted the government to initiate a national consultation in 2014 on ways to improve, or possibly introduce fundamental changes to, the system. First steps have been taken, including a thorough revamping of the supervisory framework in January 2015 and government reform proposals in July. To help frame the debate, section B takes stock of the main characteristics and recent developments of the Dutch pension funds in a cross-country perspective. Section C performs single-factor stress tests on a typical pension fund, with a view to identify short- and long-term financial vulnerabilities. Section D discusses various reform options currently under consideration to address the main shortcomings of the Dutch pension schemes, drawing on the experience of other countries to highlight advantages and pitfalls associated with alternative schemes. Section E concludes by offering a few policy recommendations.

B. Overview of the Dutch Pension Funds over the Crisis

Organization and size of the collective pension schemes

4. **Occupational pensions complement public benefits for about 90 percent of total employees.** Set up by social partners at industry or company levels in the aftermath of WWII, the 'second pillar' pension plans feature quasi-mandatory participation, at the initiative of the employer, for workers covered by collective labor agreements. About 5.5 million active members participate in the schemes, a number which has recently declined along with a shrinking workforce as well as an increasing share of "self-employed" in the active population, while income-related benefits are handed out to more than 3 million retirees (Table 1). The number of institutions has steadily decreased, as the Dutch central bank (DNB), acting as supervisor, has encouraged mergers through additional regulatory requirements (e.g. related to reporting requirements and rules governing the composition of the boards of the funds), thus allowing for economies of scale. The industry is heavily concentrated, with the two main funds (ABP and PFZW) and the ten biggest funds accounting for about 45 percent and 68 percent of total assets, respectively.

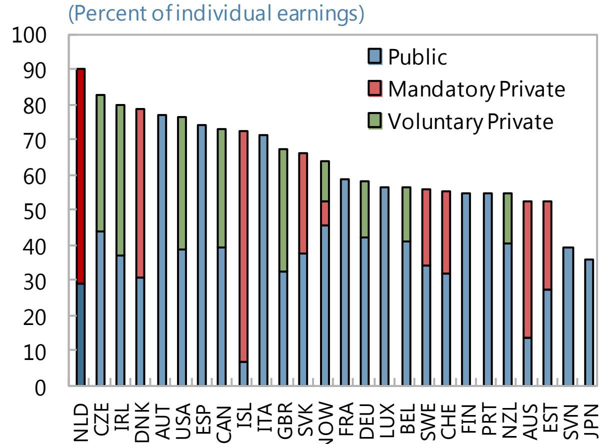
Table 1. Netherlands: Pension Fund Structure and Development, 2005–14

	2005	2006	2007	2008	2009	2010	2011	2012	2013	2014
Total number of funds	800	767	713	656	579	514	454	414	382	365
Number of industry-wide pension funds	103	103	96	95	87	82	77	74	72	69
Company funds	683	650	604	547	479	419	364	327	297	284
Professional funds	14	14	13	14	13	13	13	13	13	12
Number of members (thousands)	6232	5958	5984	5824	5820	5852	5823	5699	5577	5502
Number of deferred members (thousands)	8292	8522	8960	9341	9507	8861	9046	8929	9026	9153
Number of beneficiaries (thousands)	2438	2484	2577	2609	2710	2767	2875	3009	3057	3187
Assets under management	635,647	704,266	778,561	709,901	744,738	801,842	874,742	1,005,844	1,024,086	1,252,029
Technical provisions	479,993	501,900	493,167	621,762	634,287	719,160	837,385	911,923	886,316	1,071,027
Gross benefits		24,105	23,130	24,411	26,853	27,435	28,961	31,725	33,596	32,028
Gross contributions		20,006	20,483	21,446	22,412	23,680	24,544	24,853	25,620	26,381
Average funding ratios	101%	102%	106%	102%	108%	110%	111%	112%	109%	108%

Source: DNB.

5. **Most pension funds offer pre-funded defined benefit (DB) retirement incomes, providing for generous replacement rates.** Benefits are typically accrued annually at a constant rate recently reduced to at most 1.875 percent of the annual salary averaged over the career. They are generally granted in the form of real life annuities indexed to either price or industry wage developments, as cash withdrawals are prohibited. These characteristics ensure the pooling of longevity and investment risks and the provision of generous replacement rates. To promote a level playing field in the labor market, contributions are levied at a uniform rate (*doorsneepremie*) on wages regardless of age. This implies an *ex ante* transfer from younger to older generations, insofar as that the future value of the formers' contributions is much larger due to longer time span until retirement.

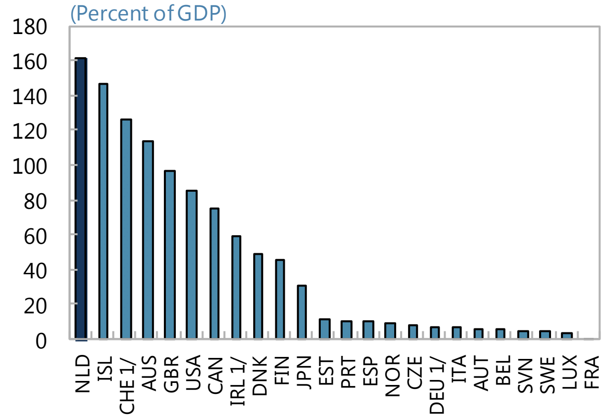
Gross Pension Replacement Rates, 2014
(Percent of individual earnings)



Source: OECD.

6. **The investment portfolio of Dutch pension funds amounts to about 160 percent of GDP.** Most pension funds are 'mature' investment vehicles, currently engaged in their 'divestment' phase after decades of asset build-up. At an aggregate level, notwithstanding intergenerational discrepancies, pension assets have come to represent the bulk of household wealth, encouraged by the tax deductibility of contributions and returns.

Pension Fund Assets, 2014
(Percent of GDP)



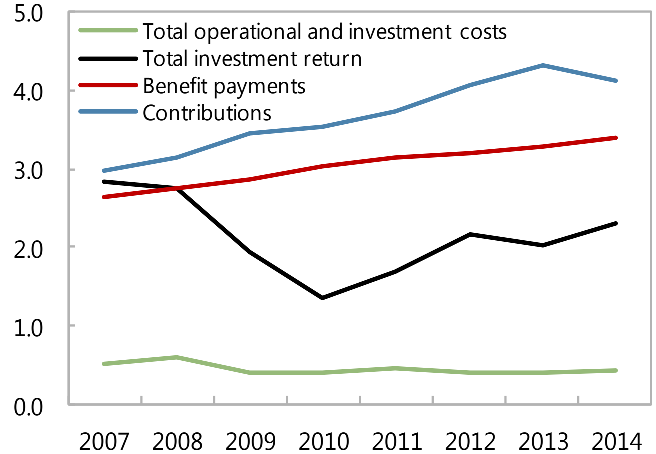
Source: OECD.
1/ Estimate.

C. Developments of the Pension Funds over the Crisis

Returns and costs

7. **The pension funds have offset collapsing returns by levying catch-up contributions and reducing benefit indexations, thus increasing operating as defined contribution (DC) schemes.** As investment returns underwent a marked drop in 2008–2010, some funds were prompted to reduce or freeze indexation benefits and levy catch-up contributions to preserve solvency ratios, thus negatively affecting disposable income. Thus, while in principle offering defined benefits, the funds have increasingly started to operate as *de facto* defined contributions (DC) schemes, but in a non-transparent and unpredictable way. To limit the pro-cyclical interplay between economic downturn and household earnings, the authorities introduced a revised supervisory framework (new Financial Assessment Framework—nFTK) in January 2015, which allows funds to spread out the amortization of unfunded actuarial liabilities over longer periods of time (Box 1).

The Netherlands: Cash Flow Developments
(Percent of total assets)



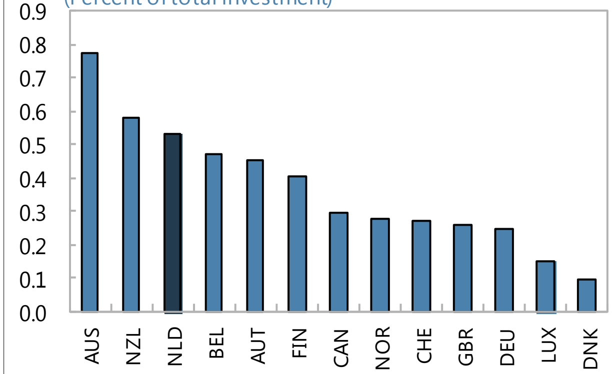
Sources: DNB and IMF staff calculations.

Box 1. The New Financial Assessment Framework

Introduced in January 2015, the revised Financial Assessment Framework (nFTK) is aimed at helping pension funds better smooth the consequences of financial shocks, so as to limit the pro-cyclical impact of benefit curtailments or contribution increases. In case their solvency ratio falls below the minimum funding ratio of about 105 percent, pension funds are required to submit a recovery plan to restore their policy funding ratio, computed as the average funding ratio over the past twelve months, to about 120 percent of their own funds within ten years. Recovery may be achieved through catch-up contributions or reduced benefit indexation, with benefit curtailments only required as a last resort in the case of solvency ratios below 80 to 90 percent or in case the policy funding ratio cannot be restored within five years. However, such curtailments may be spread out over ten years, thus allowing for a gradual absorption of shocks. In July 2015, the central bank also changed the calculation method of the 'ultimate forward rate' (UFR), namely the long-term reference rate anchoring the yield curve used to discount the funds' actuarial liabilities. The UFR was reduced from 4.2 percent to 3.3 percent, closer to market values (but still above the 30 year zero coupon bond yield) at the cost of further immediate pressure on funding ratios.

8. **Overall costs have been contained, but there remains some room for efficiency gains**. Over the crisis, the funds were able to contain management and investment costs at about 0.5 percent of total assets, ranging from about 0.25 percent for fixed income and equity products to more than 3 percent for private equity. While moderate by international standards, such cost levels may be deemed relatively high in light of sizeable economies of scale, with major players such as APG (ABP's management company) commonly charging 50–70 basis points for very standardized products. Moreover, cost containment appears to have been mostly achieved by wage compression while administrative expenses were on the rise, thus pointing to pervasive sources of inefficiencies likely attributable to complex redistribution mechanisms within institutions.

Pension Funds' Operating Expenses, 2011
(Percent of total investment)

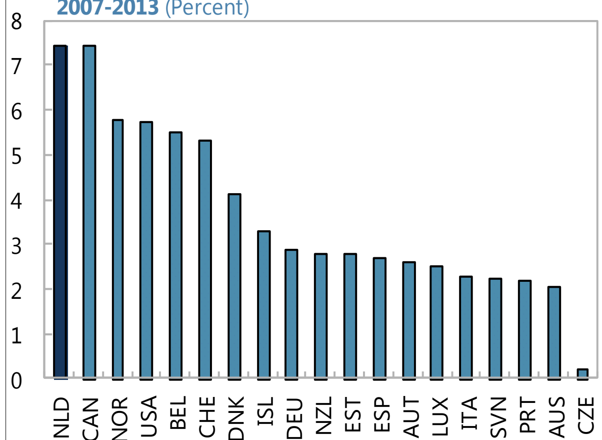


Sources: OECD and DNB.
Note: all data are not strictly comparable, as some funds do not report on indirect investment expenses.

Balance sheet developments

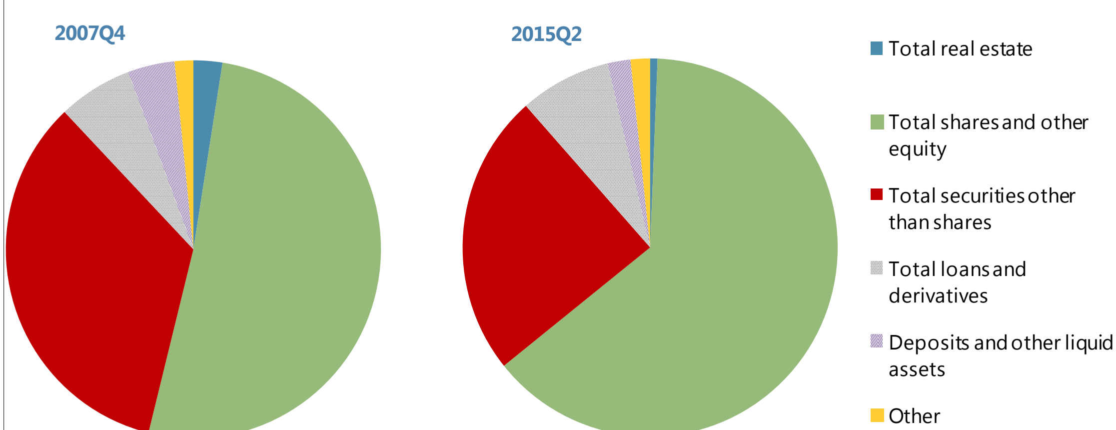
9. **The rebound of profitability has been accompanied with an increasing share of equity in pension fund portfolios.** In the wake of the financial crisis, Dutch pension funds have managed to bounce back to satisfactory rates of return in comparison to

Pension Fund Real 5-Year Average Annual Returns, 2007-2013 (Percent)



Source: OECD Global Pension Statistics.

The Netherlands: Breakdown of Assets



Sources: DNB and IMF staff calculations.

peers, achieving above 7 percent in real terms on average over the last few years. This rebound has taken place against the backdrop of an increasing share of equity in the funds' portfolios. However, this shift appears mostly attributable to valuation effects, as investment flows have been evenly allocated to fixed income and equity. The quality of the fixed income assets held by the funds has deteriorated over the crisis, reflecting low credit ratings worldwide. The funds also appear to have made more use of financial derivatives, notably to actively hedge interest rate risks, along declining liquidity buffers.

10. **The management of pension plans also underwent significant changes over the crisis.** The share of investment in the domestic economy has reportedly remained constant at around 15 percent of total assets. However, the funds have started outsourcing a large part of their investment portfolios to multinational asset managers or insurance companies. Specific funds have also been set up to enter the domestic mortgage market at a rapid pace. While it is too early to draw any definite conclusions regarding the impact of such changes on the long-term investment strategy of the funds, it should be noted that recent developments featuring higher credit and, possibly, counterparty risks, lower diversification, and reduced liquidity buffers entail the risk of increased balance sheet volatility at a time of mounting demographic pressures.

D. Stress-Testing the Collective Pension Schemes

11. **We construct a virtual national pension fund reflecting the features of the overall system of collective pension schemes.** While existing Dutch institutions differ in terms of size, demographics and financial situations, they operate under a rather homogeneous framework with regard to benefit computations, actuarial assumptions and funding methods. This makes it possible to set up and stress test a virtual pension fund reflecting nationwide demographic and financial characteristics, with the objective of highlighting the resilience and vulnerabilities of the system as a whole. To this end, we rely on a customized version of the stress-testing framework proposed by Impavido (2011) to describe the impact of shocks affecting the solvency ratio of an aggregate fund typically offering defined, indexed benefits in the current financial environment (see the Appendix for data sources and main actuarial assumptions).

12. **Financial liability stress tests indicate that the solvency of Dutch collective schemes remains sensitive to interest rate and inflation risks.** Starting from a (scaled) solvency ratio of 105 percent corresponding to the regulatory minimum, we stress test the impact of a downward, parallel shift of the entire yield curve prompting a commensurate re-pricing of liabilities. Other things being equal, a protracted period of low interest rates would exert significant downward pressures on funding ratios, given the value increase in real life annuities associated with lower discount rates, in a context where no benefit curtailment is assumed to take place (see text table).

Dutch National (Model) Plan—Solvency Stress Test (Yield Curve Shift)

Yield curve shock (basis points)	-150	-100	-50	-25	0	+25	+50	+100	+150
Funding ratio (percent)	81.5	88.9	96.5	100.5	105	109.5	114.2	123.8	133.8

Note: interest rates are assumed to remain at the zero lower bound instead of turning negative when the magnitude of the assumed negative shock is bigger than the actual, prevailing levels.

Wage inflation shocks turn out to exert broadly similar effects on funding ratios, reflecting both the larger build-up of accrued benefits by active members due to higher nominal income and the indexation of retirement pensions (see text table). While the likelihood of near-term inflation spike in the Euro zone is probably low on current trends, it is worth pointing out that significant effects are shown to materialize as of 3 percent wage inflation—from the 2.5 percent commonly used as a basis for calculations by pension funds in the Netherlands.

Dutch National (Model) Plan—Solvency Test (Inflation)

Inflation shock (basis points)	-150	-100	-50	0	+50	+100	+200	+400
Funding ratio (percent)	128.2	120.1	112.4	105	97.9	91.1	78.5	67.2

Overall, these simulations suggest that Dutch pension funds remain vulnerable to financial developments—although estimates are to be considered upper bounds, to the extent that they do do not factor in any endogenous reaction of fund policies to shocks, whereas the revised supervisory framework (nFTK) explicitly provides for partial benefit de-indexation contingent on solvency pressures and whereas half of the funds' liabilities is hedged against interest rate risks.

13. **We seek to capture the impact on funding ratios of changes in the membership structure of the funds by simulating various patterns of contribution across age cohorts.** We compute the future value of contributions paid by all active members as a constant share of their salary. Assuming that the proportion of accrued contributions in the existing asset pool of our representative fund remains constant from one generation to the next, we then test for the impact on solvency of changes in population patterns by examining the variations of total assets associated with different contribution amounts. Thus, we essentially follow a comparative-static approach to assess the effects of long-term generational changes, abstracting from transition paths. With all other factors assumed to grow at exactly the same rate, the simulation results should cautiously be interpreted as pointing to directions of change rather than assessing precise values.

14. **A substantial switch of younger generations to self-employment status would put pressure on the long-term solvency of Dutch collective schemes.** With these caveats in mind, membership termination by young workers is found to undermine solvency ratios in the long run, starting from a 105 percent funding ratio (Table 2). This is because the actuarial value of contributions paid by younger workers is higher than the value of their retirement benefits. As the reverse holds true for older workers, the separation of the latter category from the fund is found to actually bring about improvements in solvency ratios. In this case however, an implicit assumption is that these members would totally relinquish their accumulated pension rights, which is unrealistic in practice. Thus, the mechanical improvement generated by the model should be considered an upper bound, reflecting simplifying assumptions. While more granular investigation would be required to identify the specific income categories most likely to opt out of collective schemes and build a personal pension, these results suggest that the erosion of fund membership associated with increasing self-employment may pose structural challenges to the long-term viability of collective pension schemes, especially if it were to affect mostly younger generations. Also noteworthy is the result that across-the-board departure from the funds would (slightly) undermine their solvency ratios.

Table 2. Dutch National (Model) Plan—Solvency Stress Tests (Change in the Membership Composition)

	Funding ratio (percent)
5% of active members aged 20-45 leave the fund	101.1
10% of active members aged 20-45 leave the fund	97.2
15% of active members aged 20-45 leave the fund	93.3
5% of active members aged 46-65 leave the fund	107.8
10% of active members aged 46-65 leave the fund	110.8
15% of active members aged 46-65 leave the fund	114.1
10% of all members leave the fund	102.5

Note: the cutoff date of 45 years has been identified in the literature as representing a turning point from a situation where members tend to contribute more than they accrue, to one where the reverse holds true.

E. Possible Reform Options

15. **Recent developments point to the need for more individualization in the design of Dutch pension schemes.** The occupational funds have started to combine some of the disadvantages associated with both defined contributions (DC) and defined benefits (DB) schemes. Akin to DC schemes, the funds have exhibited increasing uncertainty over the future levels of benefits, moreover in a non-transparent way. Akin to DB schemes, the collective schemes feature a range of structural weaknesses: lack of transparency allowing for opaque risk-sharing mechanisms; lack of flexibility in the face of profound labor market changes; and actuarially unfair *ex ante* intergenerational transfers. As it turned out over crisis years, these problems entail substantial economic costs, among which increased macroeconomic volatility associated with pro-cyclical income developments (which remained arguably limited given the existence of buffers to absorb shocks), insufficient coverage of some segments of the labor market, and uncertainties on asset allocation objectives. In turn, these may end up eroding the social consensus upon which the collective schemes were built, possibly in a non-linear way—as possibly foreshadowed by the steady increase in the share of self-employment within the active population. In a context where the ambition of most schemes has been *de facto* reduced and sponsors are tempted to switch to individual defined contribution (DC) plans, the challenge for Dutch policy makers is to overhaul the basic pension contract in a way that assigns more explicitly members' pension rights and obligations at an individual level, so as develop a consensus as to the appropriate level of risk sharing and how to preserve it.

16. **The government sent a proposal to Parliament in July 2015 for "personal pensions with risk sharing" (PPR).** This set out general principles for pension reform, which include a proposal for "personal pensions with risk sharing" (PPR). These consist of mandatory individual, defined contribution (DC) pension contracts complemented with two provisions: (i) the compulsory conversion, upon retirement, of accrued personal assets into annuitized income streams rather than into lump sum withdrawals, so as to prevent participants to opt out of pooling longevity risk; (ii) the subscription of a complementary insurance policy possibly covering macro-longevity and

investment risks, to an extent still to be determined. A few stakeholders and pension sponsors also champion the transformation of the existing defined benefit (DB) plans into collective defined contribution (CDC) schemes. These involve levying fixed contributions on members and recording them in notional accounts, while still defining benefits by means of a formula referring to accrued earnings—with the proviso that retirement incomes take the form of variable annuities, the value of which is contingent on the financial health of the fund.

17. **We seek to highlight how competing reform options could address outstanding issues in Dutch 'second pillar' pension funds.** Staying aside from equity considerations, we try to characterize the ways in which alternative schemes would likely address the financial and structural issues identified above, referring to solutions implemented in peer countries whenever deemed relevant.

Transparency and flexibility

18. **Schemes featuring personal pensions guarantee the highest level of transparency on wealth accumulation**. The experience of the crisis brought to the fore a high degree of opacity regarding the allocation of costs within the collective schemes, affecting both current and retirement incomes. By construction, individualized DC schemes such as PPR are meant to directly address this concern by clearly linking retirement benefits to accumulated personal assets. By contrast, CDC schemes fall short of comprehensively quantifying risk transfers among participants, because strategic investment decisions are taken with regards to the joint interests of all members but equally affect the amount of annuities perceived at an individual level. In this respect however, the experience of the Swedish 'first pillar' could offer relevant insights on ways to clearly allocate costs and risks among active and retired members within collective schemes featuring notional accounts, while also making room for full-fledged DC strategies in the determination of the overall retirement income (Box 2).

19. **Personal pension plans also appear best suited to the needs of self-employed workers**. Further to catering to the needs of those individuals that genuinely opt for the status of self-employed on account of the flexibility required by their job, the introduction of mandatory PPR would extend social security coverage to those workers pushed toward the status of self-employment for tax and contribution avoidance motives. To accommodate the specific needs or desires of participants, these could possibly feature a mix of lower contributions and lower benefit accrual in some economic sectors.

Box 2. Notional DC Plan and Premium Accounts in Sweden

The Swedish pension system relies on three pillars: (i) the public pension system, which features earnings-related benefits financed for the most part on a pay-as-you-go basis, but also partly through defined contributions, and supplemented by a means-tested guarantee; (ii) mandatory occupational pension schemes for workers in industries covered by nationwide collective labor agreements; (iii) voluntary private savings through insurance companies.

The major component of the public scheme is an income-based 'notional defined contribution' plan, financed on a pay-as-you-go basis and combining DB and DC features. Benefits are recorded in notional accounts, but converted into real life annuities at retirement using a coefficient which depends positively on lifetime earnings and negatively on contemporaneous life expectancy, hence providing for gradually decreasing replacement rates as life expectancy improves. Employee and employer contributions of about 16 percent of the pensionable salary are paid to four autonomous national pension funds, the financial balance of which is automatically ensured by symmetric adjustments of pension benefits and returns credited to notional accounts in case of shocks.

Established in 1999, the so-called 'Premium Pension' accounts represent the DC components of the mandatory individual accounts. Contributions amounting to 2.5 percent of the pensionable wage are credited to individual investment accounts, offering a limited range of options to choose from about 700 independently managed mutual funds. The Premium Pension Agency (PPM) collects contributions and invests them in the individually chosen options, charging a fixed annual fee of 0.3 percent of the account balance plus the management fees of the various mutual funds. To keep costs under control, the PPM forces the funds to offer fee rebates depending on the premiums they charge and on the size of their portfolio, and pass them on evenly to all participants, thus subsidizing members opting for low-costs plans. Participants can claim benefits as of 61 years old or continue accumulating them after retirement age, either in the form of life annuities or lump sums.

In terms of insights for Dutch pension reforms, the main component of the Swedish public scheme appears to provide an interesting blueprint for CDC plans featuring clear cost allocation rules, while the Premium Pension system could be considered an interesting option to progressively educate beneficiaries to the build-up and management of their own retirement income accounts in a (potentially) cost-effective way.

Risk sharing

20. **Collective DB schemes feature a large degree of risk sharing but may end up encouraging a suboptimal degree of risk taking.** There is an economic case for *ex post* risk sharing mechanisms within DB pension schemes, as the pooling of longevity and investment risks theoretically eliminates precautionary savings. In turn, this may provide for lower contributions and/or higher benefits, and may enable greater risk taking at the aggregate level. Yet in the context of an ageing population, long-term asset allocation decisions within collective schemes could end up being increasingly biased towards the interests of older members, favoring fixed income products to the detriment of higher return instruments—thereby also diverting a substantial share of domestic savings from growth-enhancing investments. In this respect, CDC schemes do not substantially differ from DB schemes, inasmuch as they seek to limit those variability components of annuities that do not arise from *ex post* financial shocks. By contrast, PPR plans are explicitly geared toward smoothing the investment risk profile of individuals over their lifetime, allowing for more risk taking at a younger age, when workers still have the time and ability to make use of their human capital to offset possible downturns, and for choosing more stable returns in the years preceding

retirement. As such, contributory schemes support long-term investment without the need to hedge interest rate risk to offer nominal stability. For example, the 'superannuation accounts' set up in Australia in have been instrumental in building up a large pool of pension equity in record time (Box 3).

Box 3. Superannuation Funds in Australia

Australia features a three pillar pension system, comprising: (i) a strictly means-tested public pay-as-you-go old age pension; (ii) a network of mandatory, privately-operated 'superannuation funds'; and (iii) private savings funded, inter alia, by voluntary contributions to the superannuation funds.

Introduced in 1992, the 'Superannuation Guarantee' program consists in a network of private pension plans funded by mandatory employer contributions. The plans can be operated by companies, employer associations (retail, industry), financial professionals or individuals themselves. Set at 9 percent of employee earnings (above a certain threshold, and up to a ceiling representing about 2 ½ times the average wage) since the early 2000s, mandatory contributions are in the process of being gradually increased to 12 percent by 2020. Most funds operate on a DC basis, allowing participants to either withdraw the accumulated capital as a lump sum (except if they are still working) or in the form of a real (inflation-indexed) life annuity as of 55 years old—a threshold being progressively raised to 60 years old. Employees may also defer claiming superannuation after the retirement age, currently set at 65 years. No contributions are to be made for unemployment periods.

As the 'first pillar' flat-rate pension fulfills redistribution objectives, ensuring a replacement ratio of just about 30 percent of the minimum wage, most of the income replacement function falls on the 'second pillar' superannuation funds—complemented by 'third pillar' private savings. The latter have been instrumental in building up a large pool of pension assets in a relatively short period of time—arguably also reflecting an unprecedented period of robust, externally-driven economic growth.

Besides underdeveloped annuity markets, the system's main challenge has been to improve the financial literacy of members, based on the observation that participants tend to overwhelmingly choose the default investment option of the various plans and may possibly proceed to early cash withdrawals for other purposes than building their retirement income. Thus, recent reforms have focused on standardizing risk disclosures by the various funds, launching educational campaigns centered on default options, and forcing employers to direct contributions made on behalf of 'passive' participants to newly-created "MySuper" default products offering significant asset diversification and standardized fee reporting. In the short run, these efforts seem to have resulted in increased complexity and rising administrative costs.

Combining some strong asset build-up due to mandatory participation with the flexibility offered by individual DC schemes, the Australian system may provide valuable insights for the overhaul of Dutch occupational schemes. However, cost effectiveness is a growing concern and the decumulation phase still remains to be organized, while the financial sustainability of the plans has remained untested so far.

21. **The challenge for DC options consists in cushioning individual risk taking.** In practice, the main reason prompting pension sponsors, including public ones, to opt for DC type of pension schemes has been to shift risk away from their balance sheet by transferring it to individual participants. By emphasizing free choice in savings product and payout options, DC plans strive to closely align the investment strategies and risk profiles of participants. The challenge for policy makers thus consists in defining safeguards against excessive pension losses, so as to prevent old age poverty and avoid undue pressure on the sustainability of social security schemes. In this respect, in the context of a very diversified landscape of DC occupational funds, the solution

implemented in Switzerland has been to force all DC plan providers to guarantee a minimum rate of return to active members, and to empower policy makers with the mandate of periodically setting the conversion rate of accumulated assets into pension annuities—at the cost of an arguably high degree of complexity, along with potential sustainability issues (Box 4). In Australia, the alternative has been to establish a strictly means-tested 'first pillar' as a foundation for the superannuation funds, so as to preserve fiscal sustainability while providing for a social safety net (Box 3). Results have been mixed, however, in terms of old-age poverty reduction.

Box 4. Occupational Pension Plans in Switzerland

The Swiss pension system has three tiers: (i) an earnings-related, DB public scheme with redistributive features, supplemented by means-tested benefits; (ii) mandatory occupational plans; and (iii) private savings, in the form of tax-deductible supplementary contributions to those plans.

The 'first pillar' public scheme is financed on a pay-as-you-go basis through employer and employee contributions amounting to about 5 percent of the pensionable salary in total. Benefits are calculated using a formula linking the number of years worked and lifetime average income, and are subjected to upper and lower limits, thus ensuring some substantial redistribution, with replacement rates ranging from 16 to 32 percent of average earnings.

Occupational pension funds operate as defined contributions (about 85 percent of the total), defined benefits, or hybrid plans. Participation has been mandatory since 1985 for all workers with income above a certain threshold, and employer contributions have to at least match those of employees. Pension benefits are fully portable, with employees being required to participate in turn to the pension systems of their successive employers. In the case of funded plans, benefits are calculated through the accumulation of yearly individual credits, the value of which increase with age. Up to one quarter of the accumulated capital can be withdrawn as a lump sum. The funds all have latitude to adjust the degree of benefit indexation or to raise supplementary contributions to comply with the required 100 percent funding ratio plus a buffer, but need to guarantee a minimum rate of return on individual accounts, currently set at 1.5 percent and revisable every two years. Furthermore, accumulated savings in DC schemes are to be converted into real life annuities upon retirement using a nationwide conversion rate, which has been recently reduced to 6.8 percent in view of increasing life expectancy and falling yields. Taken together, these features introduce a strong DB component in DC schemes, with the explicit objective that the combination of 'first pillar' and 'second pillar' benefits results in an overall replacement rate of 60 percent of average income.

In terms of take-away for Dutch pension reform options, the Swiss 'second pillar' appears to combine a very high degree of flexibility associated with multiple DC plans with the solidarity associated with strong DB components, given also the progressivity of the 'first pillar'. This is reportedly carried out, however, at the cost of acute complexity and associated costs. The country also came out relatively unscathed from the recent financial crisis, implicitly postponing the sustainability test of its pension system.

22. **Another difficulty associated with the management of risks within DC schemes relates to the financial literacy of the population.** In the longer run, the main challenge in entrusting individuals with the build-up of their own pension lies in the level of financial literacy of participants—many of whom have been shown unprepared and unwilling to make what would seem to be optimal investment decisions in various country surveys (Australia, Sweden, United States). To some extent, this problem can be circumscribed by restricting the range of possible investment options offered by DC schemes. It also requires that the pension supervisor carefully monitor the risk content of the default option, overwhelmingly chosen by members in countries operating DC

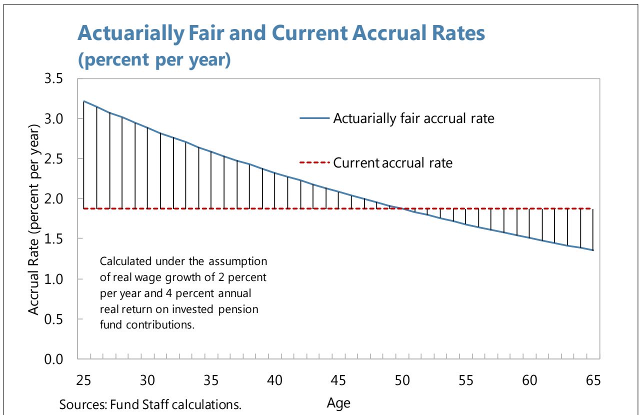
schemes. Following the Australian example (Box 3), this would argue for focusing financial education efforts on the default option itself, so as to ensure a reasonable degree of understanding of it by members. An alternative option would be to have part or all of individual investment portfolios to be collectively managed by social partners, such as within the public pension fund ATP in Denmark.

Costs

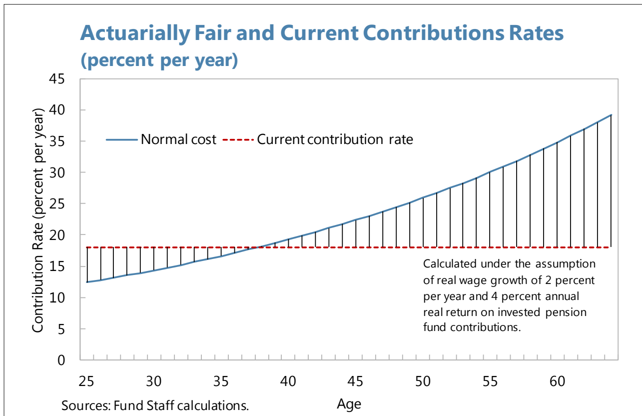
23. **The jury is still out on the costs associated with the operation of alternative pension schemes.** Substantial economies of scale have generally been put forward as a major comparative advantage of DB schemes, owing to both lower operational costs needed to manage standardized investment products and reduced investment costs associated with large asset pools and virtually open-ended investment horizons. Yet such low hanging fruit does not seem to have been fully picked by Dutch occupational pension funds, due to the increasing complexity and administrative costs triggered by successive adjustments of the regulatory framework—not to mention the pervasive costs associated with the co-existence of multiple schemes, which could theoretically be avoided by aggregating them into a national fund. By contrast, DC schemes need not necessarily be particularly costly, depending on the degree of standardization of investment products and the use of IT technologies to manage savings accounts. From this viewpoint, the partial pooling of risks within PPR-type of schemes may add a costly layer of complexity to the challenges of managing customized investment accounts, which would require careful investigation. In Australia, the standardization of investment options seems to have helped generate savings, but a high degree of decentralization coupled with increasing complexity make it challenging to keep costs under control.

Actuarial fairness

24. **Making contributions increasing with age would reduce actuarially unfair transfers within collective schemes while supporting household debt reduction.** Redistribution mechanisms within pension schemes have the potential to influence the overall domestic savings rate by unequally (in an actuarial sense) burdening categories of agents with different propensities to save. In this respect, the Ministry of Social Affairs has proposed to gradually abolish the uniform contribution system (*doorsneepremie*) by maintaining uniform contributions but allowing for decreasing accrual rates with age—the main consideration being to avoid putting older workers at a



Sources: Fund Staff calculations.



Sources: Fund Staff calculations.

disadvantage on the labor market. An alternative, however, could be to preserve the constant accrual rate used to compute pension benefits while making contributions progressive with age, thus backloading the contribution schedule in light of the longer accumulation of investment returns from younger generations. By freeing disposable income for the most financially-constrained agents in the economy, this would help reduce household debt and, assuming a higher propensity to consume of younger workers than older ones, help sustain domestic demand. In view of an already higher structural unemployment rate of older workers in the current system, this reform would, presumably, only entail second-order detrimental effects on the latter category of the active population. Moreover, with a view to reduce existing transfers from low skilled to higher educated workers in the current schemes, the modulation of accrual rates depending on income brackets possibly by means of differentiated tax deduction rates, could potentially improve the sustainability of 'second pillar' schemes while fostering the development of private savings options.

F. Conclusion

25. **The Dutch occupational funds have started to combine the disadvantages of DC and DB schemes.** Reflecting the impact of *ex post* financial shocks during the crisis, the level of ambition of most collective plans has been *de facto* reduced by benefit curtailment or de-indexation, while contributions were raised to support funding ratios. However, *ex ante*, actuarially unfair redistribution mechanisms, typically from the young to the old, or from the poor to the rich, have remained unscathed. Thus, the 'second pillar' of the Dutch pension system has been increasingly operating as a collective defined contribution one, falling short of providing full nominal security and the degree of risk sharing expected from DB schemes while still featuring opaque transfers mechanisms that may have delayed debt deleveraging and the economic recovery. Looking forward, simulations suggest that the solvency of most funds remains highly dependent on financial conditions, while public confidence shocks have the potential to undermine the sustainability of the system as a whole.

26. **These issues argue for taking up the challenge of introducing personalized pensions while preserving the benefits of longevity and investment risk pooling.** The move towards a more contributory regime would simultaneously enable to better align the funding strategy of the funds with the interests of participants, and to put an end to opaque and actuarially unfair transfer mechanisms—thus strengthening the social consensus underpinning the redistributive aspects of the system. In this respect, the proposal of 'personal pensions with risk-sharing' (PPR) appears to address some of the major concerns that have been raised in the last few years. Yet innovative solutions are called for to fulfill the promises of longevity and investment risk pooling embedded in the proposed contract, in a context where all forms of insurance products are likely to remain under pressure in the prevailing low interest rate environment. The targeted degree of risk sharing might best be achieved by collective asset management by the social partners, articulated with the careful design of savings options to be chosen from. However, further to the challenge of attuning the pension risk management structure to social preferences, the examples of successfully operated schemes in peer countries provide insights into other issues likely to emerge in the design of DC schemes with redistributive features, mostly pertaining to cost effectiveness and the design of payout options.

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Appendix I. Data Sources and Actuarial Formulas Used to Stress Test the Dutch Collective Pension Schemes

Data sources

Mortality tables: Actuarieel Genootschap, Orlevingstafels GBM en GBV 1995-2000, Mannen (Actuarial Association, male mortality table 1995-2000) (no unisex table available)

Yield curve: DNB Statistics, Table 1.3.1 "Nominal interest rates term structure pension funds (zero coupon), updated September 2, 2015

Membership and overall demographics: DNB Statistics, Table 8.7. "Demographics of pension funds", updated September 17, 2015

Fund portolio: DNB Statistics, Table 8.1.2 "Assets and liabilities of pension funds, by sector of counterparty", updated September 10, 2015

Average wage by age: Central Bureau of Statistics (CBS), Table "Employment: jobs, wages, working hours; key figures, 2013"

Actuarial assumptions

Entry age, 20 years; retirement age, 65 years (no early retirement); no deferred members[2]; wage inflation, 2.5 percent; merit increase, 2 percent; labor productivity increase: 1 percent; investment portfolio: 40 percent fixed income, 60 percent equity; payout option: single real life annuity; (uniform) contribution rate: 18 percent; (constant) accrual rate: 1.875 percent;

Actuarial formulas

Actuarial liabilities for retired members

- Present value of a €1 real life annuity for each cohort at age x:

$$\ddot{a}_x^{\pi} = \sum_{s=0}^{\infty} (1+\pi^e)^s \; {}_sp_x^{(m)} v^s$$

with π^e the expected inflation rate, ${}_sp_x^{(m)}$ the conditional probability of survival (m) for members aged x and v the discount factor.

[2] We do not consider the situation of so-called 'deferred members', namely workers that have accumulated benefit rights but do not participate anymore in specific institutions, because they have migrated either to other schemes or to self-employment, because we assume that these transitory situations do not affect total membership.

- Aggregated actuarial liabilities for all retired cohorts:

$$AL(R) = \sum_{x=r}^{\infty} [(RN)(RB)(RNd_x)(RBd_x)\ddot{a}_x^{\pi}]$$

with RN the number of retirees, RB the average retirement benefit, d_x denoting these variables' respective distributions, and r the retirement age.

Actuarial liabilities for active members (projected unit credit method)

- Projected wage at age s>x:

$$w_{s,x} = \frac{m_{s,y}}{m_{x,y}} [(1+\pi^e)(1+pr)]^{(s-x)}$$

with $m_{s,y}$the cumulative merit increase at age s for an entry age y in the pension plan and pr the productivity improvement.

- Accrued benefits at retirement for each active cohort (final average salary function):

$$B_{r,x} = b(r-y)w_{r,x}[(AN)(AW)(ANd_x)(AWd_x)]$$

with b the (constant) accrual rate, $w_{r,x} = (\sum_{s=r-10}^{r} w_{s,x})/10$, AN the number of active members, AW the average wage, and d_x denoting these variables' respective distributions.

- Total accrued benefits at retirement for all active cohorts (pro-rated projected unit credit – constant dollar benefit allocation method):

$$AL(A) = \sum_{x=y}^{r-1} \frac{(x-y)}{(r-y)} B_{r,x} ({}_{r-x}p_x^{(T)} v^{r-x} \ddot{a}_x^{\pi})$$

with ${}_{r-x}p_x^{(T)}$ the conditional probability of termination (T) at age x.

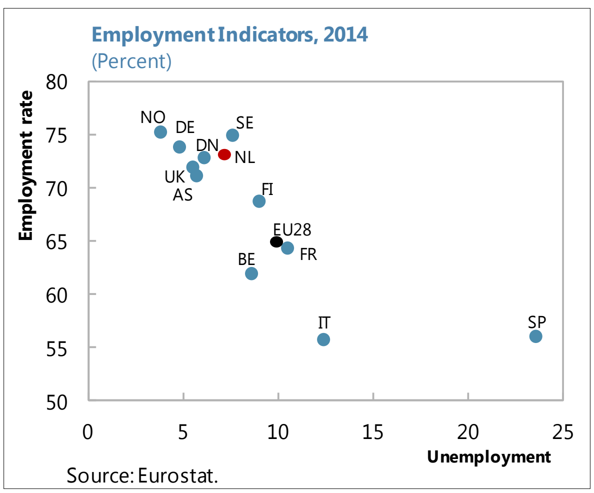
DUAL LABOR MARKETS IN THE NETHERLANDS—ENVIRONMENT AND POLICY IMPLICATIONS[1]

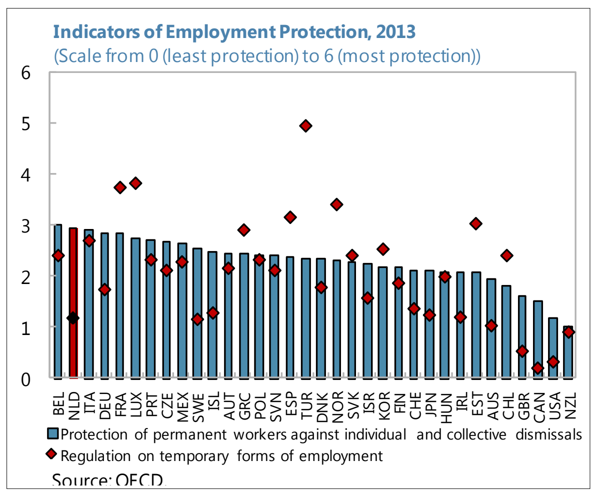
Non-standard work contracts, in particular self-employment, increased significantly in the Netherlands in the last decade and a half. These arrangements contribute to increase labor flexibility, they entail fiscal costs and they have the potential to undercut pension disability insurance.

This paper discusses the fiscal and social safety net implications of the shifting employment arrangements. In particular, it reviews the tax incentives for self-employment and the implications for the fiscal accounts, disability insurance and the pension systems.

A. Background

1. **The Dutch labor system provides a high level of protection to workers on standard employment contracts**. In comparison with its European peers, the Netherlands has both low unemployment and high employment rates. Moreover, the Dutch labor market includes a large segment of workers, often older and better trained, with strong employment protection. The OECD Employment Protection Indicator ranks the Netherlands second highest in the protection of regular workers against individual and collective dismissals. Dismissals are arduous and expensive, with costs increasing with workers' age and years of service.[2]





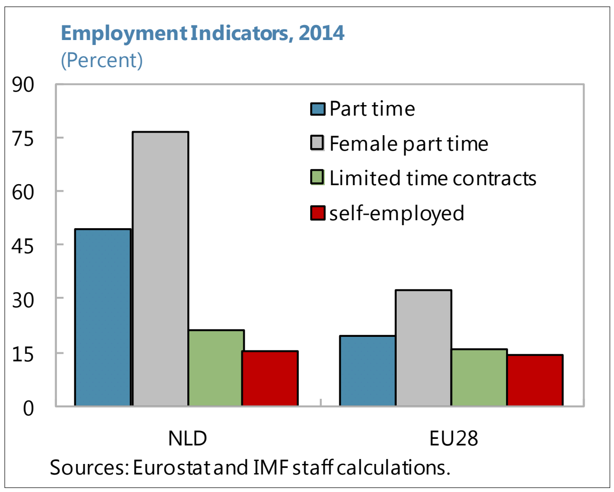
2. **Non-standard working arrangements have proliferated in response to labor restrictions.** The rates of part-time work, fixed-term work and temp agency work are typically rather high among EU28 countries. However, part-time work is preferred to full-time work by many, in particular women with young children.

[1] Prepared by Michelle Hassine (EUR).

[2] The cost of dismissal was reduced in July 2015 but remains proportional to number of years of service.

B. Development of Self-Employment

3. **The self-employed share of the workforce has grown rapidly over the past 15 years. (Figure 1)** The self-employed are freelance workers who provide services and conduct their activities under commercial contracts that receive lower protection than labor contracts. The number of self employed reached 1.4 million workers in June 2015—17.2 percent of labor aged 15–65, a figure that has been rising by an average 2.8 percent per year since 2003. Self employment is most prevalent in agriculture, where it provides more than half of labor, and in construction and health services. Two-thirds of hospital-based specialists (e.g., nurses and physicians) and about 40 percent of all active physicians in the healthcare sector are classified as self employed.[3] Three out of four self-employed contractors have no staff, and in 2015 a quarter of the self-employed working alone had at most three clients or customers per year.[4] Self-employed workers are on average more educated; about 80 percent of them have at least a high-school degree—higher than the 60 percent in the Dutch labor force in general.



4. **Self-employed workers often remain outside Dutch social protection systems (Box 1).** With the exception of social services available to all residents, self-employed contractors have to arrange for their own disability insurance and retirement and the income-related component of health insurance.[5]

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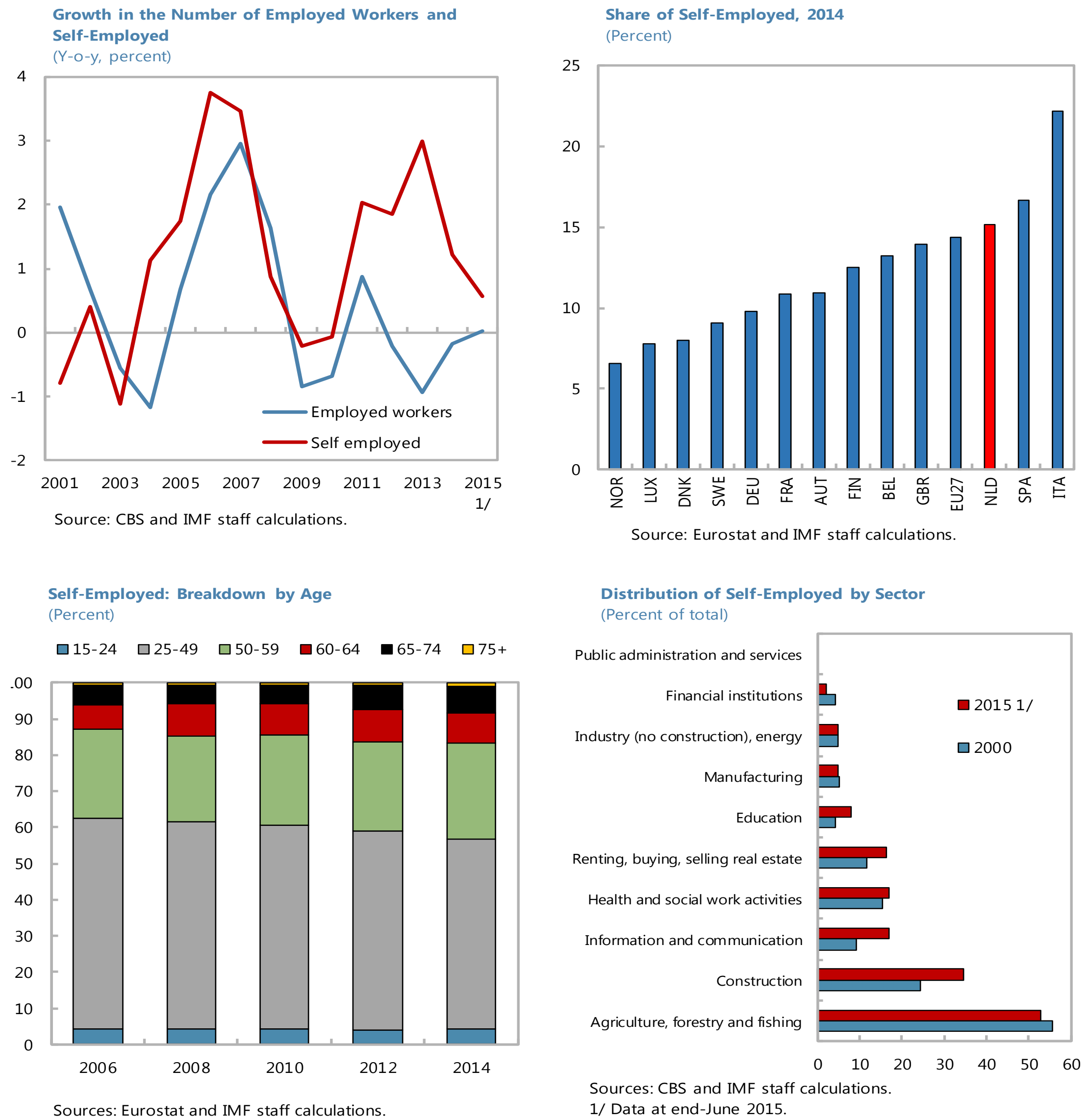
[3] Data from Statistics Netherlands for 2013 (Table Medisch geschoolden; arbeidspositie, positie in de werkkring, naar beroep) and The Dutch Healthcare System, 2009 in The International Profile of Health Care Systems, Commonwealth Fund, June 2010.

[4] Data from Statistics Netherlands, Survey of Self Employed, 2015, from http://www.cbs.nl/nl-NL/menu/themas/arbeid-sociale-zekerheid/publicaties/publicaties/archief/2015/zelfstandigen-enquete-arbeid-2015-pub.htm, Table 5.1.1 p.63.

[5] All adults living permanently in the Netherlands are required to purchase their own health insurance. Lower-income individuals are eligible for a rebate or subsidy. However, there is an income-related surcharge to the basic premium that is paid by the employer, or in the case of a self-employed person, by the individual.

5. **Self-employed contractors are less expensive than regular workers for employers.**[6] The main savings are due to the absence of employer contribution for unemployment, disability, and payroll tax. The social contributions for regular workers do not apply to self-employed persons. Self-employed contractors also do not participate in collective bargaining and are not eligible for the minimum wages set in those agreements. Their work arrangements are flexible with workload and orders, and there is no limit to the hours worked. Hiring and dismissal have limited costs

Figure 1. Self-Employed in the Netherlands



[6] The minimum age to apply for Pillar I was reformed in 2009 and raised to 66 by 2018 and 67 by 2021. Early retirement under Pillar I is not allowed.

Box 1. Incentives Associated with the Status of Self-Employed Workers in the Netherlands

Self-employed contractors benefit from several tax deductions and support from social funds, which reduce their effective income tax and increase their subsidies.

Tax deductions: The net earnings of self-employed contractors are taxed as income rather that as corporate income, and they receive several tax deductions and deferrals. The four main tax allowances are: (i) an entrepreneur's allowance (€7,280 per year); (ii); an SME profit exemption on 14 percent of the profit net of other deductions; and (iii) an age-dependent tax-deferred retirement allowance on up to 9.8 percent of the annual profit with a €8,631 cap to help build retirement savings[1]. Finally, (iv) self-employed contractors may receive a starter's allowance (€2,123 per year) for three years. Additionally, self-employed workers are eligible to allowances for research and development (in 2015 up to €12,421 per year, and 50 percent additional for new entrepreneurs), investment (28 percent of the invested amount, with a €15,600 annual cap), and the remuneration of co-workers (limited to 4 percent of taxable profits). A one-time tax deduction (€3,630) is allowed on net profits when the business is sold or shut down. Operating costs can also be deducted from the tax base, including rent, utilities, and interest payment. Asset depreciation observes no preset schedule, and the unused part of the main tax deductions may be carried forward for up to 9 years. One-person businesses may also become VAT-exempt. The tax deductions apply when self-employed contractors report at least 1,225 worked hours per year. However, the tax authorities deem time spent on administration and education worked hours.

Social contributions and benefits

- ***Health, sickness and disability insurance:*** All adults in the Netherlands must purchase health insurance at a flat rate (generally €90–€100 per month). In addition, employers pay an income-related surcharge for their workers—6.95 percent to cover health insurance. Self-employed contractors pay a reduced 4.85 percent premium for their basic insurance, and no contribution for long-term care. Disability insurance is not required of the self employed, although they can purchase policies on the private market or continue public policies from previous employment or unemployment. These tend to be relatively expensive and only a minority of the self employed are believed to have taken out this insurance.

- ***Unemployment protection:*** Self-employed contractors are not part of the unemployment insurance system and are therefore are not eligible for unemployment benefits. However, to ease the transition from unemployment to self-employment status, new self-employed contractors are allowed to keep their unemployment benefits during the start-up phase. Depending on the income from the new business the unemployed person must pay back (part of) the unemployment benefits after about two years.

[1/.] The rate was 10.9 percent in 2014 and 12 percent earlier. Upon retirement, the tax-exempted purchases in pension annuities are capped at €400,000 per person. The outstanding tax exempted pensions annuities reached about €50 million in 2014.

6. **Self-employed contractors benefit from favorable tax treatment, which is intended to help them arrange for own pension and other contributions.** They are eligible for tax allowances, and pay reduced taxes on their profits. The four main tax deductions indicated in Box 1 reduce their taxable income significantly. The net disposable incomes of self-employed contractors are about 20 percent higher than those of wage earners (Table 1).

Table 1. Taxation of Wage Earners and Self Employed, 2015
(in Euros, per year)

	Calculations	Minimum wage		Average wage		Twice average wage	
		Wage earners	Self employed	Wage earners	Self employed	Wage earners	Self employed
Gross earnings (wages or profits)	1	24,394	24,394	46,017	46,017	91,286	91,286
Social contributions	2	4,872	-	10,518	-	20,284	-
Gross taxable income	**3 = 1 - 2**	**19,522**	**24,394**	**35,499**	**46,017**	**71,002**	**91,286**
In percent of wage earners' gross taxable income			*125.0*		*129.6*		*128.6*
Mandatory tax contributions 1/	4	351	2,418	1,385	6,888	3,682	15,837
Tax allowances to self-employed	5		**11,353**		**16,499**		**27,274**
of which:							
Entrepreneur's allowance							
(€7,280 per person per year)			*7,280*		*7,280*		*7,280*
SME profit exemption							
(14 percent of net profits)			*2,396*		*5,423*		*11,761*
Tax-deferred retirement allowance							
(9.8 percent of net profits)			*1,677*		*3,796*		*8,233*
Taxable income	**6 = 3 - (4 + 5)**	**19,171**	**10,623**	**34,114**	**22,630**	**67,320**	**48,175**
In percent of wage earners' taxable income			*55.4*		*66.3*		*71.6*
Income tax, tax credit, and social premiums	7	2,631	66	9,147	5,739	25,297	20,688
Income tax and insurance contributions		*6,997*	*4,489*	*13,238*	*10,009*	*28,157*	*22,601*
General tax credit		*-2,203*	*-2,203*	*-1,871*	*-2,050*	*-1,342*	*-1,354*
Tax on earned income		*-2,163*	*-2,220*	*-2,220*	*-2,220*	*-1,518*	*-559*
Other taxes	8	-942	590	0	2,884	0	4,803
Net disposable income	**9 = 6 - (7 + 8) + 5**	**17,482**	**21,320**	**24,967**	**30,506**	**42,023**	**49,958**
In percent of wage earners' net disposable income			*122.0*		*122.2*		*118.9*

Sources: IBO ZZP, Tables p. 135–140, and IMF staff calculations.
1/ Including pension and disability insurance.

7. **The authorities have recently adopted measures to curb the sham self-employment.** The legislation introduces standard contracts from April 2016 and creates a presumption of responsibility for the employer for underpayment of taxes and contributions in the event that the contract is found not to qualify as a labor contract.[7]

C. Self Employment has Implications for Private and Public Balance Sheets

8. **Self-employed contractors have lower incomes than wage earners on average and often rely on other income (Table 2).** Data for 2007 show that 42.7 percent of self-employed workers reported an annual gross business profit below €10,000, suggesting that some work fewer than the minimum 1,225 hours per year needed to qualify for the self-employment tax allowance.

[7] The new legislation also allows the tax authorities to check whether the commercial contract is creating an employer-employee relationship. On the Act on Deregulation Labor Relations, see https://zoek.officielebekendmakingen.nl/kst-34036-2.html (in Dutch).

The same population segments rely on other incomes—wages or pensions, suggesting that self-employed individuals supplement their incomes elsewhere.

9. **Pillar I provides the self-employed workers with an–above poverty level but relatively low income in retirement.** It offers a pay-as-you-go tax-financed coverage to all residents from the age of 65. It provides a flat benefit based on the number of years of residency in the country between ages 15 and 65 (gradually being raised to 67 and subsequently indexed to life expectancy). Based on 2008 data, the combined benefits served to self-employed workers by Pillars I and II replace half of their working-life current income. In contrast, the replacement rate for wage earners reaches in average 65 percent. In the absence of Pillar III pensions, other voluntary savings, or Pillar II entitlements, self-employed workers would have to rely on Pillar I.

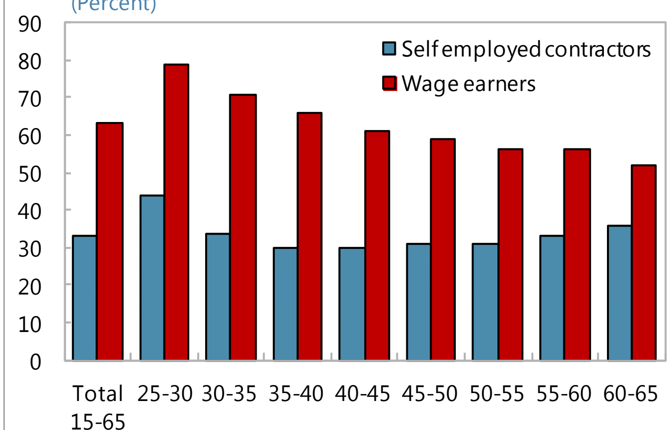
10. **Self-employed workers have limited access to Pillar II pensions.** Pillar II pensions are designed to cover wage earners and may cover self-employed persons only if they have contributed in the same sector before their transition to the self-employed status. Conditions for the admission of self-employed contractors vary fund by fund. Since 2011, new self-employed individuals may in principle remain in their Pillar II pension funds through voluntary contributions, but for a maximum of 10 years, provided they remain in the same sector. If they do, self-employed contractors need to contribute both the employer's and employee's part of the premiums, resulting in a steep increase in their direct contributions. They may also lose the benefits associated with pensions' indexation on average sector wages rather than the CPI. The flat contribution rate on all cohorts makes those leaving their pension fund net subsidizers of older cohorts, and deprives them of the ability to receive a similar subsidy from younger cohorts as they age.

Table 2. Self-Employed Workers: Annual Incomes, 2007

Annual gross business profits (in EUR)	Share in percent	Share of self employed receiving a wage or pension	Share of self-employed receiving another income
Below 0	14.6	72.4	59.8
0-5,000	18.0	71.4	57.2
5,000-10,000	10.1	53.1	35.6
10,000-20,000	16.0	39.9	24.4
20,000-40,000	21.0	27.1	14.7
40,000-60,000	10.5	19.9	11.0
60,000-80,000	4.2	20.3	11.5
80,000-100,000	2.0	21.6	12.7
Above 100,000	3.6	25.1	15.2
total	100.0	45.1	32.1

Source: Socio-Economic Council (SER), Freelancers in pictures: A comprehensive vision of the self-employed, Opinion No 2010/04, October 15, 2010 (in Dutch), based on tax reports for 2007.

Pillar I and II: Cumulated Replacement Rates by Participant's Age, 2012
(Percent)



Sources: CBS and IMF staff calculations.

11. **The Dutch pension system provides for Pillar III plans for the self employed or employees who would like to save more for retirement.** However, self-employed individuals have made little use of Pillar III and other voluntary savings.[8] Also, self-employed persons do not own significantly higher old-age savings than the median wage-earner population. About 40 percent of self-employed do not contribute to any additional pension plan and their savings declined during the financial crisis.[9] In large part, low and more volatile incomes explain lower savings for retirement in comparison with those of wage earners.[10]

Self-employment arrangements affect the public accounts

12. **The tax allowances for self-employed workers have substantial revenue costs reaching 0.7 percent of GDP in 2015 (Table 3).** Given its high level, the entrepreneur's allowance nearly eliminates the income tax for a large number of lower-income self-employed contractors. The combined SME profit exemption and starter's allowance reduce taxes by 0.4 percent of GDP.

Table 3. Estimated Fiscal Costs of the Tax Allowance to Self-Employed

	2007		2015	
	In billion euros	in percent of GDP	In billion euros	in percent of GDP
Total fiscal costs (1+2+3+4)	2.5	0.5	3.3	0.7
1. Entrepreneur's allowance				
Applicable rate: €7,280 per person per year				
fiscal cost 1/	1.4	0.2	1.8	0.3
2. SME profit exemption				
Applicable rate: 14 percent of total gross profit				
Fiscal cost 2/	0.9	0.1	1.4	0.2
3. Starter's allowance				
Applicable rate: €2,123 per year over 3 years during first 5 years	0.1	0.2	0.1	0.2
4. Tax-deferred retirement allowance				
Applicable rate: 9.8 percent of total gross profit (2015)				
Fiscal cost 1/	0.1	0.0	0.0	0.0
Memorandum items:				
Number of self employed, thousands	675.7		1385.0	3/
GDP, billion euros	613.3		674.8	

Sources: CBS, tax authorities, and IMF staff calculations.
1/ Tax expenditure data (2015 Budget in the Miljoenennota bijlage 5).
2/ Data for 2007 are taken from SER (2010), those for 2015 from the IBO ZZP (2015).
3/ Data at end-June 2015.

[8] Donders P. and Pennings, F., 2012

[9] de Vries et al., 2010.

[10] For example, see Mastrogiacomo and M. Alessie R. (2015).

13. **Given their lower taxable incomes, the self-employed are more likely to qualify for support from social funds, which further contributes to deteriorate public accounts.** The subsidies received by self-employed individuals are difficult to measure, due mainly to sparse information. However, their lower tax base makes self-employed workers eligible for a range of public services, in particular long-term and nursing care, and lower rents in the social housing sector. To the extent that their taxable income is low enough to qualify, they also receive housing subsidies, as well as child care and support. The authorities estimate total government expenditure for these benefits for the self employed contractors at about €220 million in 2015.[11]

D. Conclusions

14. **The large and growing population of self-employed workers reflects deep changes in the Dutch labor market.** Self employment has added flexibility in work arrangements and helped the Dutch economy adapt to globalization. Many of the self employed are middle- or higher-income professionals with adequate insurance and retirement arrangements. However, others are lower-income workers who are not enrolled in the insurance and pension protection schemes that apply to workers covered by standard labor contracts. They are therefore at higher risk for lower incomes in old age and disability.

15. **There is a need to clarify the status of self-employed, in particular by tightening eligibility.** At present, a single self-employment status serves to cover a wide variety of situations—self-employed with or without personnel, full-time self-employed and part-time self-employed; and activities based on real entrepreneurship or opportunistic decision. Not all of the self employed are in that status voluntarily. Many work under conditions that resemble regular employment relationships, and their increasing number has the potential to undercut the social safety net and to jeopardize the viability of the pension schemes. Therefore, tight enforcement of recent regulations aimed at screening involuntary self employment is a welcome development. Perhaps new criteria could also help (e.g., when hours and work location are set by the entity paying for the services, there would be a presumption that this is a regular employment relationship).

16. **The lack of retirement benefits and sickness and disability insurance for the self employed should be addressed.** The low levels of participation in Pillar II and Pillar III pension schemes and sickness and disability insurance exposes many of the self employed to low income in retirement and disability. This could be addressed through a collectively-managed Pillar III system with contributions roughly equivalent to average Pillar II plans for employees. The self employed could be enrolled by default but opt out of part of the pension contributions down to some minimum level. Sickness and disability insurance could also be made obligatory, and a collectively managed insurance pool could be used to control costs to beneficiaries. At the same time, the authorities should consider liberalizing the regulatory regime for employees and move toward more equal tax treatment between employees and the self-employed.

[11] There is no information as to how much of this amount is due to the deductions to taxable income solely for the self-employed population. Lower-income employees would also be eligible to receive these benefits based on taxable income.

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